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1902/03

South Dakota Agricultural College

Annual Catalogue

1902-1903.

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UNIVERSITY OF ILLINOIS



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Published by the College,
Brookings, S. Dak., July, 1903.

South Dakota Agricultural College.

Annual Catalogue.

1902--1903

With Announcements for 1903-1904.

Published by the College.
Brookings, South Dakota, July, 1903.

PART ONE.

GENERAL STATEMENTS.

CALENDAR FOR 1903-4.

1903. FALL TERM, TWELVE WEEKS.

September 21-23—Entrance Examinations and Registration.
September 23.—Work of Fall Term Begins at Noon.
September 26.—Faculty Reception to Students.
September 29.—President's Annual Address to Students.
November 26-27.—Thanksgiving Recess.
December 16.—Fall Term Closes at Noon.

1904. WINTER TERM, TWELVE WEEKS.

January 4.—Work of Winter Term Begins at Noon.
January 5.—Faculty Reception to Students, 8:00 to 9:00 p. m.
February 20.—Washington and Lincoln Memorial Address in Chapel.
March 25.—Winter Term Closes at Noon.

1904. SPRING TERM, TWELVE WEEKS.

March 28.—Work of Spring Term Begins at Noon.
June 16.—Work of Spring Term Ends.
June 16.—
10:30 a. m., Commencement Exercises.
9:00 to 10:00 p. m., Reception of Students.

1904. FALL TERM.

September 21.—Fall Term Begins.
December 15.—Fall Term Ends.

CALENDAR OF SHORT COURSES IN 1904.

January 4 to February 11.—Short Course in Agriculture.
January 4 to March 25.—Course in Dairy Science. (Butter Making.)
January 4 to March 25.—Horticulture. (Nurserymen's Course)
January 4 to June 16.—Practical Steam Engineering.
January 4 to June 16.—Public School Drawing.

REGENTS OF EDUCATION.

HON. M. F. GREELEY,.....Gary
HON. IVAN W. GOODNER,.....Pierre
HON. R. M. SLOCUM, ... Herreid
HON. F. A. SPAFFORD, ... Flandreau
HON. A. W. BURTT, ... Huron

OFFICERS OF THE BOARD

HON. IVAN W. GOODNER President
HON. I. D. ALDRICH, ... Secretary
HON. C. B. COLLINS, (State Treasurer)..... Treasurer

REGENTS' COMMITTEE FOR THE COLLEGE.

HON. F. A. SPAFFORD. HON. R. M. SLOCUM.

MR. R. A. LARSON,
Secretary and Accountant, Brookings, S. D.

FACULTY.

JAMES CHALMERS, Ph. D., D. D., LL. D., *President*, Professor of Philosophy, Economics and Sociology.

ROBERT FLOYD KERR, A. M., Librarian and Director of College Extension Work.

JAMES HENRY SHEPARD, B. S., Professor of Chemistry.

HALVOR CHRISTIAN SOLBERG, M. E., Professor of Mechanical and Steam Engineering.

ELLERY CHANNING CHILCOTT, M. S., Professor of Geology and Agronomy.

HUBERT BERTON MATHEWS, M. S., Professor of Physics and Electrical Engineering.

BOWER THOMAS WHITEHEAD, M. S., Ph. C., Professor of Pharmacy.

NIELS EBBESEN HANSEN, M. S., Professor of Horticulture and Forestry.

DEALTON SAUNDERS, A. M., Professor of Botany and Entomology.

GEORGE LINCOLN BROWN, Ph. D., Professor of Mathematics and Astronomy.

EDWARD LOCKHART MOORE, B. S., D. V. S., Professor of Zoology and Veterinary Medicine.

ARTHUR BOONE CROSIER, Professor of Stenography and Commercial Science.

JOHN HERSEY WHEELER, A. B., Professor of Modern Languages and Athletic Director.

ELMER KENDALL EYERLY, A. M., Professor of English and Oratory.

LUCY AMELIA DUBOIS, A. B., (Preceptress) Professor of Latin and Associate Professor of English.

ADA BERTHA CALDWELL, Professor of Industrial Art.

ROBERT BLACKWOOD FORSEE, Pe. P., Principal of Preparatory Department.

ALBERT SPENCER HARDING, A. M., Professor of History and Civics.

JAMES WILBUR WILSON, M. S. A., Professor of Agriculture and Animal Husbandry.

AUSTIN BENJAMIN CRANE, M. S., Professor of Agricultural Engineering.

JOHN C. McARTHUR, *Capt. 28 Infantry, U. S. A.*, Professor of Military Science and Tactics.

RUTH A. WARDALL, A. B., Professor of Domestic Science.

INSTRUCTORS.

————————, Instructor of Dairy Science.

WALTER STRICKLAND THORNBER, M. S., Assistant in Botany and Horticulture.

HOWARD HARTMAN HOY, M. S., Assistant in Physics and Engineering.

FRANK EDGAR HEPNER, B. S., Ph. G., Assistant in Chemistry.

T. OSCAR EDGAR, B. S., Assistant in Zoology and Bacteriology.

HARRY G. SKINNER, B. S. A., Assistant in Agriculture and Animal Husbandry.

JOHN PARMELEE MANN, Instructor in Vocal Music and Stringed Instruments, and Band Leader.

HELEN MAUD COLLIN, Instructor in Vocal and Instrumental Music.

MAUD J. VAUGHAN, Instructor in Elocution and Physical Culture.

FRANK A. NORTON, B. S., Ph. G., Assistant in Chemistry.

JOHN NELSON, Registrar and Assistant in Commercial Science.

JOHN S. COLE, B. S., Assistant in Agronomy.

————————, Assistant in Mechanical and Steam Engineering.

J. B. STONER, Assistant in Agriculture.

COMMITTEES.

The Faculty meets regularly every Monday, during term time, at 4:15 p. m. To facilitate the work and aid the Executive in disposing of minor questions, the following committees are appointed for the current year:

REGENTS COMMITTEE ON CLASSIFICATION AND COURSE OF STUDY—Chalmers, Wilson, Whitehead, Mathews, Chilcott, Hansen, Solberg and Moore.

DEPORTMENT—Brown, Mathews, Wheeler, Eyerly, Kerr, Wilson, Whitehead, Harding and Crane.

COLLEGE EXTENSION—Kerr, Shepard, Harding, Forsee, Brown and Moore.

ATHLETIC—Wheeler, Eyerly, Mathews, Saunders and Wilson.

LIBRARY—Harding, Kerr, Eyerly, DuBois, Shepard and Forsee.

LITERARY—Crosier, Wheeler and Caldwell.

LIVING AFFAIRS—DuBois, Solberg, Forsee and Thornber.

SCIENTIFIC RESEARCH—Wilson, Hansen, Shepard, Saunders and Moore.

SOCIAL AFFAIRS—Eyerly, Hansen, Caldwell, Crosier, Mann and Hoy.

STUDENT LABOR AND GROUNDS—Hansen, Wilson, Solberg and Crane.

STUDENT ORGANIZATIONS AND PUBLICATIONS—Mathews, Harding, Whitehead, Solberg, Kerr, Crane, Hoy and Thornber.

STATION COUNCIL AND MEETINGS

The Station Council is composed of the Regents Committee for the College, the President of the College and heads of staff divisions.

This Council meets regularly throughout the year on the first Wednesday of each month at 4:15 p. m., and at such other times as the Director may designate.

AGRICULTURAL EXPERIMENT STATION STAFF.

James W. Wilson, Director *Animal Husbandry*
E. C. Chilcott, Vice Director *Agriculturalist*
James H. Shepard *Chemist*
N. E. Hansen *Horticulturist*
D. A. Saunders *Botanist and Entomologist*
E. L. Moore *Veterinarian*

Frank E. Hepner *Assistant Chemist*
Walter S. Thornber *Assistant Botanist and Horticulturist*
A. B. Holm *Photographer and Assistant in Soil Physics*
Wm. West *Foreman Station Farm*
H. G. Skinner *Assistant in Animal Husbandry*
Sylvester Baltz *Superintendent Highmore Sub-Station*
Chas. Haralson *Gardener and Florist*
R. A. Larson *Secretary and Accountant*
T. B. Kelly *Station Stenographer*

OTHER REGULAR EMPLOYES.

Samuel J. Wood *Engineer and Fireman*
Fred Betkey *Assistant Engineer and Fireman*
George E. Purdy *Janitor and Carpenter*
H. C. Hanson *Farm Teamster*
John Olson *Horticultural Teamster*

TUTORS.

Tutors for the several departments will be appointed and published at the opening of the new college year.

All students absent from regular college exercises will be expected to arrange with a tutor for making up omitted work. For tutor charges see page 62.

COLLEGE ALUMNI.

ALUMNI ASSOCIATION.

Vinal B. Valleau, '91 *President*
Halvor C. Solberg, '91 *First Vice President*
Ina May Colegrove, '99 *Second Vice President*
George R. Wescott, '03 *Third Vice President*
Albert S. Harding, '92 *Secretary and Treasurer*

GRADUATES.

MASTER OF SCIENCE. (M. S.)

Aldrich, John M., '91.....Prof. Entom. U. Idaho, Moscow, Io.
Brown, James A., '96.....Attorney Lincoln, Neb.
Chilcott, E. C., '98.....Prof. Geology and Agro. S. D. A. C.
Crane, Austin B., '03.....Prof. Agricultural Eng...S. D. A. C.
Davis, Homer, '91 Physician Genoa, Neb.
Griffiths, David, '93 Agrostologist, Agr. D't., Washington
Harkins, Lilla A., '98.....Prof. Domestic Sci. Bozeman, Mont.
Hoy, Howard H., '03.....Asst. in Phys. & Eng...S. D. A. C.
Knox, William H., '01.....Ast. U. S. Soil Surv., Los Angeles, Cal.
Luke, Fred K., '96.....Florist, Shaw Bot., G. St. Louis, Mo.
Mathews, Hubert B., '99...Prof. of Physics.....S. D. A. C.
Mathews, Eva
(Plocker), '94..... Brookings
McKenney, Dustin W.,'89..Direct. Man. Train., Homestead, Pa.
Parsons, Thomas S. '98....Science Teacher..... Watertown
Robertson, Ada N., '96.....Clerk Helena, Mont.
Schoppe, W. J. A., '95.....Signal Service Buffalo, N. Y.
Sproul, Alex. H., '95.....Teacher Elgin, Ill.
Tanzy, Hattie
(Dibble), '99 Matron Yankton Col., ... Yankton

Thornber, Walter S., '99...Asst. in Bot & Hort. S. D. A. C.
Whitehead, Bower T.,'01...Prof. of Pharmacy S. D. A. C.
Whitten, John C., '99.....Prof Hort. U. Mo. ..Columbia, Mo.
Williams, Effie
(Snell), '96..... Madison
Wilcox, Ernest W., '96.....Teacher Thawville, Ill.
Wolgemuth, Lee E., '91...Head Draughtsman C., M., St. P.,
& O., Ry..... St. Paul, Minn.

BACHELOR OF SCIENCE. (B. S.)

Ainsworth, Cephas B., '97.Bank Clerk Estelline
Ainsworth, Howard, '98..... Baraboo, Wis.
*Aldrich, Ellen
(Roe), '89.....
Aldrich, Irwin D., '91.....Editor and Farmer,.....Bigstone
Aldrich, John M., '88.....Prof. Zool. U. of Idaho, Moscow, Io.
Allen, Wm. C., '89.....Physician Chicago, Ill.
Allen, Hart M., '00.....Druggist Pacific Junction, Iowa
Allison, Wm. F., '96.....Civil Engineer Willamette, Ill.
*Anderson, Clark W., '00.....
Arnold, Katie
(Boswell), ... Estelline
Atkinson, Jesse C., '96.....Contractor Zion City, Ill.
Atkinson, George W., '97...Topographer Mitchell
Atkinson, Walter, '97.....Civil Engineer Zion City, Ill.
Austin, Steven E., '92.....Machinist Iowa

Bagley, Susie, '01.....Teacher Chicago, Ill.
Bates, Edmund T., '93.....Farmer Onslow, Iowa
Barton, Alice E., '98.....Teacher Brookings
Bacon, Nora
(Updyke), '91..... Pueblo, Col.
Beck, Milton, '93.....Machinist Saginaw, Mich.

*Deceased.

Beck, Louis, '98.....Machinist Saginaw, Mich.
Beebe, Jay L., '00.....Physician Mitchell
Bell, William D., '91.....Editor Slayton, Minn.
Bentley, William S., '91...Physician Gary
Bolles, Myrick N., '98.....Instructor Col. U...New York, N. Y.
Bolles, Laura Jane, '01....Teacher Colman
Boyd, Mary, '01.....Teacher Volga
Boyden, Frank E., '97....Student Chicago Ill.
Boyden, Maude
(Hegeman), '98.....Student Chicago, Ill
Brosseau, Jesse E., '01.....Student Chicago, Ill.
Brown, Cyrus O., '94.....Attorney Burwell, Neb.
Brown, Ida (Dibble) '96..... Lincoln, Neb.
Brown, James A., '94.....Attorney Lincoln, Neb.
Brown, Sara, '95.....Teacher Shannon City, Ia.
Brooke, Grace
(Lawshe), '89.....Telephone Operator.... Brookings
Bullen, Grace
(Young), '97..... Brookings

Carlson, Ella, '00.....Student Pembina, N. D.
Carlson, Esther, '00.....Teacher St. Paul, Minn.
Carter, Lewis W., '96.....Farmer Highmore
Clevenger, John W., '97....Dentist Chamberlain
Colegrove, Ina May, '99...Teacher Brookings
Cornell, Harry M., '95.....Real Estate ... Willow City, N. D.
Crane, Austin B., '91.....Prof. Agr. Eng..... S. D. A. C.
Crane, Alice
(Curtiss), '98..... Brookings
Crane May
(Cranston), '89..... Brookings
Crane, Maggie
(Davidson), '98..... Spokane, Wash.
Cranston, Maggie, '01.....Teacher Faulkton

Cross, Alvah G., '89....
Crowley, Cassie
(Madden), '97..... Mound City
Culhane, Michael E., '01...Stenographer Brookings
Cunningham, Sara
(Haber), '89..... Spokane, Wash.

Davies, Mary, '00.....Teacher Tecumseh, Neb.
Davies, Sara, '00.....Teacher Tecumseh, Neb.
Davis, Homer, '91.....Physician Genoa, Neb.
Davis, Samuel H., '92.....Farmer Plankinton
Day, John M., '90.....Farmer Mellette
DeLa, John W. H., ...Teacher Houghton
Dillon, Willis C., '91.....Attorney Omaha
Dibble, Hettie
(Doughty), '91..... Yankton
Dodge, Fred E., '01.....Hotel Keeper Redfield
Doughty, Matthew W., '00.Electrical Eng... New York, N. Y.
Downing, Jennie C., '96...Telephone Operator..... Brookings

Edgerton, Wm. M., '93.....Physician Faulkton
Egeberg, Hildus, '90.....Farmer Brookings
Else, Earl, '01.....Student Chicago, Ill.
Eno, Durell G., '89.....Farmer Bijou Hills
Enos Winifred, '01.....Teacher Brookings
Erickson, Martin L., '01...Forester Flandreau
Evans, Lina Frances, '01...Student Minneapolis, Minn.

Findeis, Phillip, '99.....Merchant Mirando
Fishback, Myra, '01.....Student Wellesley, Mass.
Fjerestad, Hans C., '98....Teacher Bruce
Fleming, Michael E., '02...Teacher Bryant
Fourt, Fanny
(Shannon), '91..... Fairfield, Ia.
George, William A., '02....Student Chicago, Ill.

Grady, Francis A., '89.....Attorney.... Red Lake Falls, Minn.
Griffiths, David, '92.....Agrostologist, Agr. D't. Washington
Grattan, Paul H., '96.....Collector Elkton
Grove, Frank W., '00.....Student Chicago, Ill.
Haasarud, Ole H., '90.....Teacher Bratsburg, Minn.
Haberlein, Alice
(Robinson), '91..... Globe, Ariz.
Hamlin, John R., Jr., '92...R. R. Clerk Arizola, Ariz.
Hann, Jay B., '91.....Farmer Carthage
Harding, Albert S., '92....Prof. of History S. D. A. C.
Harding, Neva
(Whaley), '97..... Brookings
Harding, Charles J., '98...Teacher Bruce
Harkins, Lilla A., '90.....Prof. Dom. Sci. ...Bozeman, Mont.
Hart, Bertrand M., '02.....Student Chicago, Ill.
Harza, Carl, '00.....Electrician Detroit, Mich.
Harza, LeRoy Francis, '01.Asst. in Math.M. A.C.Lansing, Mich.
Hatfield, Ira H., '92.....Attorney Lincoln, Neb.
Hatton, John Henry, '01...Div. of For. Dept. Agr. Washington
Hazel, Flora
(Ainsworth), '98..... Aberdeen
Hazel, William A., '97.....Real Estate Aberdeen
Hegeman, Harry A., '96...Capt. U. S. A., San Francisco, Cal.
Hegeman, Mable I., '98....Teacher Brookings
Hepner, Frank E., '02.....Asst. in Chem. S. D. A. C.
Holm, Andrew B., '96.....Asst. in Soil Physics... S. D. A. C.
Hopkins, Mrs. C. G., '94..... Champaign, Ill.
Hopkins, Cyril G., '90.....Prof. of Agronomy, Champaign, Ill.
Hodgeson, Herbert H., '98.U. S. Geol. Survey.....Colorado
Houston, Grant, '91.....Physician Joliet, Ill.
Hoy, Nora
(Mathews), '96..... Brookings
Hoy, Howard H., '96.....Asst. in Phys. & Eng., S. D. A. C.
Husted, Harley H., '97.....Teacher Lincoln, Neb.

Irish, Henry C., '91.....Botanist, Shaw Gard., St. Louis, Mo.
Irish, Maggie
(Duffey), '90..... St. Louis, Mo.

Jenkins, John C., '90.....Attorney Brookings
Johnson, Rhoda Maria 01.Teacher Brookings
Johnson, Clara T., '02.....Bookkeeper Brookings
Johnson, Edward, '02.....Teacher Toronto
Jolley, Wm. G., '97.....Teacher Volin

Kendall, Clinton D., '00...Druggist Brookings
Kendall, Leonard J., '01...Farmer Brookings
Kenyon, Arthur H., '90....Lawyer Spokane, Wash.
Keeney, Emma A., '92.....Physician Minneapolis, Minn
Kennedy, C. LeRoy, '01....Civ. Eng.....San Jose, Cal.
Kephart, George, '02.....Editor Beresford
Knox, Wm. H., '98.....Asst. U. S. Soil Sur.....Fresno, Cal.
Knox, Elinor
(Williams), '94..... Fresno, Cal.
Korstad, Hans, '89.....Editor Brookings
Korstad, Mary, '96.....Teacher Brookings

Langdon, Lillian, '01.....Station Stenographer ..S. D. A. C.
Lawrence, Mary M., '99...Student, Pratt In... Brooklyn, N. Y.
Lawrence, Wm. H., '99....Supt. Br. Ex. Sta., Puyallup, Wash.
Lawrence, Claude W.,'98...Teacher Seguin, Wash.
Lawrence, Clay, '98.....Student Columbia Uni., New York
Lawrence, Phillip A., '88...Attorney Brookings
Lawrence, Jessie, '00.....Teacher Seguin, Wash
Larson, Lars K., '89.....Cashier Dell Rapids
Lee, Berton E., '02.....Druggist Volga
Lewis, Perry, '91.....Tinner Mankato, Minn.
Luke, Fred K., '94.....Florist, Shaw Bot. G., St. Louis, Mo.
Lusk, Willard C., '96.....Editor Yankton
Mason, Nellie, '99.....Albia, Ia.

Madden, Margaret, '92.....Teacher Brookings
Mathews, Eva
(Plocker), '92..... Brookings
Mathews, Hubert B., '92...Prof. of Physics S. D. A. C.
Mathews, Alice M., '00.....Teacher Highmore
Mathews, Roscoe A., '00...Mineralogist....Great Falls, Mont.
Merrick, Mable
(Mayland), '95.....Kansas City, Mo.
Millett, Mary
(Frick), '91..... Rochester, Minn.
McAndrew, James E.,'92...Farmer Iroquois
McElmurry, Loretta, '01...Teacher Brookings
McKenney, Dusten W., '89.Director Man. Tr'n. Homestead, Pa.
*McLouth, Ida B., '92.....
McLouth, Benjamin F., '93.Insurance Hartford, Conn.
McLouth, Lewis C., '89.....Sec. Auto. Co., ...Cleveland, O.
Moore, Anna
(Parker), '95..... Brookings
Mork, Albert A., '89.....Bank Clerk Brookings
Mork, Theodore, '01.....Real Estate Wilmot
Morrison, Freda C., '00....Teacher Smith

Nachtigal, Isaac, '99.....Teacher..... Marion

Olson, Eva, '97.....Teacher Madison, Minn.
Olson, Gustava, '00.....Teacher New York, N. Y.
Orcutt, Carrie
(Ross), '89..... Northfield, Minn.

Paddock, Jay M., '98.....Farmer Aurora
Parsons, Thomas S., '97....Science Teacher Watertown
Phillips, Florence, '01.....Teacher Brookings
Phillips, C. Louise, '01.....Teacher Brookings
Pyne, Estel W., '90 Music Dealer Santa Anna, Cal.

*Deceasd

Ramsey, Henry J., '02.....Ast.in Hort.,U. of W.,Madison, Wis.
Riemann, Edith F., '98....Science Teacher ... Stanford, N. Y.
Robertson, Ada N., '93.....Clerk Helena, Mont.
Robertson, Clarence H., '93.Sci, Teach. & Mis. China
Robertson, Edith
(Salisbury), '95..... China
Roe, Guy W., '90.....Manufacturer.....Winona, Minn.
Roe, Robert, '98.....Stockman Highmore
Rogers, Edmund, '90..... Milwaukee, Wis.
Roskie, George W., '02.....Abstractor Madison
Ross, Abbie E., '89.....Missionary San Francisco, Cal.
Sasse, Ernest G., '96.....Physician Revillo
Saylor, Christie
(Hargis), '97..... Elmo, Mo.
Saylor, Marcus A., '86.....Real Estate Tacoma, Wash.
Schlosser, Thomas F., '92.Clergyman..... Ill.
Schoppe, W. J. A., '93.....Signal Service Buffalo, N.Y.
Scott, Anna
(Wardall), '89.....Physician Kansas City, Mo.
Sevy, Isaac B., '95.....Clergyman Canistota
Sevy, Orpha
(West), '97..... Canistota
Shuster, John W., '97.....Asst. Prof. Elec. Eng., U. of Wis.,
..... Madison, Wis.
Sherwin, Howard, '99.....Civil Engineer, Binghamton, N. Y.
Smith, Alta
(Mathews), '96..... Bisbee, Ariz.
Solberg, Halvor, C., '91....Prof. of Mec. Eng. S. D. A. C.
Spooner, Jennie
(Chamberlain), '91....Physician ... Stevens Point, Wis.
Sproul, Alex H., '94.....Teacher Elgin, Ill.
Sproul, William T., '95...Draughtsman Rockford, Ill.
Stoner, Minnie A., '90.....Prof. of Dom. Sci. U. of O. Columbus
Tanzy, Hattie
(Dibble), '94.....Matron Yank. College Yankton

*Tanzy, Marvin F., '94.
Thornber, John J., '95.....Prof. of Bot., U. of Ariz., ..Tucson
Thornber, Wm. T., '98.....Farmer Brookings
Thornber, Mary Edith, '02.Asst. in Dom. Sci. S. D. A. C.
Thornber, Walter S. '97...Asst. in Bot & Hort., ..S. D. A. C.
Trooien, Ole N., '02.....Asst. in Mechanics....S. D. A. C.
Torrence, Nettie
(Sloan), '92 Brookings
Towne, Addie
(Loveland), '98..... Duluth, Minn.
Towne, Judson R., '98.....Science Teacher Duluth, Minn.

Valleau, Vinal B., '91.....Pri. Sec. Pres. Am. Ex. Co.,....
..... Chicago, Ill.
Walters, Edith, '99.....Bank Clerk Bruce
Walters, William H., '97...Grain Buyer Bruce
Wardall, Norman M., '90 .Real Estate Huron
Waters, George D., '94.....Science Teacher Madison
Wellman, Lulah E., '88..... Jamestown, N. Y.
West, Hugh H., '91.....Physician Elgin, Ill.
West, George H., '99.....Physician Iowa City, Ia.
Whitehead, Bower T., '97.Prof. of Pharmacy S. D. A. C.
Whitten, John C., '92.....Prof. of Hort., U. of Mo., Columbia
Wilcox, Alice E., '97.....Teacher Thawville, Ill.
Wilcox, Ernest N., '95.....Teacher Thawville, Ill.
Williams, Effie
(Snell), '92..... Madison
Williams, Callie T.,,, '00..... Brookings
Williamson, Albert, '96....Supt. Schools and Editor ..Oacoma
Winegar, Albert J., '92....Draughtsman Beloit, Wis.
Winegar, Laura, '02.....Teacher Brookings
Wolgemuth, Lee E., '91....Head Draughtsman C., M., St. P.
& O. Ry., ...St. Paul, Minn.
Work, Lloyd E., '97..... ...Editor Fairfield, Ia.

*Deceased.

Young, Gilbert A., '94.....Inst. Purdue U. ...LaFayette, Ind.

PHARMACY GRADUATES. (PH. G.)

Allison, Wm. F., '02.....Civil Engineer, ...Willamette, Ill.
Briggs, Elmer E., '95.....Druggist Muscoda, Wis
Brosseau, Jessie E., '00....Student Chicago, Ill.
Baldwin, Corwin B.,'00...Druggist Rapid City
Boyden, Frank E., '02.....Medical Student Chicago, Ill.
Beebe, Jay L., '98.....Physician Mitchell
Christianson, Bernett C.,'02.Drug Clerk Volga
Connell, John C., '00.....Druggist Kelley, Ia.
Cotter, J. C., '96.....Drug Clerk Dell Rapids
Cornell, Edward, '01.....Drug Clerk Huron
Clevenger, J. W., '98.....Dentist Chamberlain
Carr, George, '99.....Druggist Flandreau
Crowley, D. C. '99.....Druggist Mound City
Else, Earl, '00.....Medical Student Chicago, Ill.
Eckert, Henry, '00.....Drug Clerk Scotland
Grove, Eugene, '96.....Medical Student Chicago, Ill.
George, Wm., '00.....Medical Student Chicago, Ill.
Hepner, Frank, '99.....Asst. Chemist S. D. A. C.
Hart, Bertrand, '00.....Medical Student Chicago, Ill.
Holsey, Joseph, '00.....Drug Clerk Minneota, Minn.
Hayter, McPherson, '02....Druggist Estelline
Jones, Robert, '00.....Drug Clerk Madison
Jarrett, Arthur A., '02.....Druggist Bristol
Jarvis, Hall S., '02.....Drug Clerk Miller
Kendall, Clint D., '99.....Druggist Brookings
Knox, Wm. H., '95.....Asst. U. S. Soil Sur, ..Fresno, Cal.
Leighty, James A., '02.....Drug Clerk Iroquois
Lee, Berton, '98.....Drug Clerk Arlington
Lentz, Emil, '95.....Dentist Brookings
Lindsey, Chas., '99.....Stockman Midland
Morton, Frederic M., '02...Drug Clerk Mitchell
*Murphy, Wm., '95.....

*Deceased.

Moore, Thomas, '96.....Druggist Garretson
Oulton, Frank, '99.....Druggist Faulkton
Pickles, Chester E., '02....Drug Clerk Bradley
Palmer, Horton, '96.....Druggist White
Schnaidt, Henry, '02.....Drug Clerk Groton
Schroeder, Anna C., '02....Drug Clerk Big Stone City
Sherwin, Frank, '96.....Farmer Brookings
Shriver, E. M., '99.....Druggist Elkton
Thomas, John C., '02.....Drug Clerk Hartford
Taylor, C. DeWitt, '99.....Drug Clerk Columbia
Tidball, Clyde, '01.....Drug Clerk Brookings
Whitehead, B. T., '95..... Prof. Pharmacy S. D. A. C.



GRADUATES.

DEGREES.

MASTER OF SCIENCE. (M. S.)

Austin Benjamin Crane. B. S. '91.

Howard Hartman Hoy. B. S. '96.

BACHELOR OF SCIENCE. (B. S.)

Fred Charles Almond
John Selden Cole.
Letta Adelle Colegrove.
Frederick Walter Cuckow.
Minnie Esther Hubbart.
Isaac Benhart Johnson.
M. Krete Kendall.
Alice Langdon.
Shirley Putnam Miller.
Frank A. Norton.
Jens Martines Otterness.
E. Esther Peirce.
Ethel Ida Sanborn.
Roscoe J. Sarvis.
Louise Wilhelmina M. Seide.
George Rockwell Westcott.
James L. Webster.

PHARMACY GRADUATES. (PH. G.)

Arthur Wheeler Drew.
Roy James Hall.
Edward Christie Heston.
Arthur Rheuben Hollister.
John Elwood Howell.
Samuel Edward Johnston.
Frank A. Norton.
Frederick William Steiner.
Robert Ernest Trumm.
Fred J. Van Dusen.
Percy Williams.
Alfred Jackson Young.

DIPLOMA IN MUSIC.

Jennie Schultz.

CERTIFICATES.

CERTIFICATE IN ART.

Letta Adelle Colegrove.

CERTIFICATE IN COMMERCIAL SCIENCE.

Lyle Benedict.
Addie Hall.
Hilda N. Hanson.
Ivie E. Lees.
Henry Thogersen.

CERTIFICATE IN AMANUENSIS WORK.

Ethel Anderson.
J. C. Allison.
Andrew O. Bundy.
Glenn Cameron.
Harriet Johnson.
Thomas B. Kelly.
Jacob Koerner.
Mary McMaster.
David Stratton.
Bertha Traver.
Fred A Trumm.
Hazel Welch.
Frank Wilson.
George Williams.

CERTIFICATE IN STEAM ENGINEERING.

Oscar Anderson.
Lewis Barnard.
Clarence Carpenter.
Frank Cotes.
Robert Coyne.
Alfred Fryslie.
Elmer Green.
Oliver Gunderson.
A. S. Kubitz.
George Kilpatrick.
Edward Kirchhefer.
Thomas Lorentzen.
Gregory Meyers.
Arthur Negus.
Harry Peterson.
Charles Richardson.
Harry Roberts.
A. L. Sandell.
Wallace Serles.
Frank Scott.
Elmer Tullar.
John Tyler.
Harry Willey.

CERTIFICATE IN DAIRY SCIENCE.

H. C. Jensen.
Adolph Moen.
J. B. Stoner.
O. J. Ruste.
Martin Suelflow.

CERTIFICATE IN DOMESTIC SCIENCE.

Mina Bubb.
Clara Lindahl.

LIST OF STUDENTS.

NAME.	ADDRESS.
A	
Ackerman, Kenneth	Milbank
Aga, Gottfried	Dell Rapids
Ahre, Theodore	Toronto
Akers, Perry	Mellette
Aldrich, Geo. M.	Brookings
Allison, Harold	Brookings
Allison, Clarence	Brookings
Almond, Fred C.	Clear Lake
Alton, Ben H.	Brookings
Anderson, Arthur H.	Brandt
Anderson, Ernest	Marvin
Anderson, Ethel	Brookings
Anderson, Howard	Brookings
Anderson, Clifton	Brookings
Anderson, James P.	St. Herbert
Anderson, Mildred	Brookings
Anderson, Oscar	New Hope
Anfinson, Anton	Hayti
Austin, Floyd C.	Brookings
Atkins, Wilber	Brookings
B	
Bailey, Everett	Chamberlain
Baldwin, Edward	Alpena
Barnard, Lewis A.	Vienna
Barr, Earl W.	Brookings
Beatty, Arthur	Hitchcock
Beatty, Geo. F.	Blooming Prairie, Minn.

Beatty, Lois Hitchcock
Benedict, Lyle D. Milbank
Bergren, Will Stockholm
Bielski, Richard Howard
Bigham, John L. Tyler, Minn.
Binford, Arthur Brookings
Binford, William Brookings
Bingham, Perry Redfield
Binnewies, Mabel McCurdy
Blackstone, Maude Arlington
Blakely, John R. Brookings
Bockoven, William Clark
Booth, J. Carl Arlington
Bork, Fred Revillo
Bower, Laura Keystone
Bowman, Harry E. Wessington
Boyd, Thomas Bowdle
Boyden, Guy L. Brookings
Boynton, Cecil Thorpe, Wis.
Bratsberg, Joseph Sherman
Brebis, J. W. Bangor
Bryden, David Faulkton
Bubb, Mina M. Letcher
Bullock, Chas. D. Osceola
Bump, Celia Manchester
Bundy, Andrew O. Lyons
Burch, Walter Howard
Burghardt, Roy D. Valley Springs
Burnstad, Carl Dexter
Burton, Emma
Bushnell, Arthur Bushnell
Bushnell, Earl Brookings
Bushnell, Maude Brookings
Buswell, W. J. Schindler

C

Callsen, Fred St. Lawrence
Cameron, Glenn Artesian
Cardinal, Felix St. Onge
Carpenter, Abbie Brookings
Carpenter, Clarence Brookings
Chappell, Bessie Brookings
Chappell, Elsie Brookings
Chilcott, Ellery Brookings
Christianson, Christine Volga
Clarin, M. E. Brookings
Clarke, Blanche Brookings
Colegrove, Letta Brookings
Cole, John S. Gary
Colman, Leon Brookings
Coller, Fred Brookings
Coman, Daisy Letcher
Cooley, Chester A. Garretson
Cooley, William N. Garretson
Cooper, Claude Estelline
Corbin, Eugene Wessington Springs
Corey, Ivy M. Brookings
Cotes, Frank R. Talcott
Coughlin, C. J. Carthage
Coyne, R. E. Ethan
Craig, Earle Greenwood
Cuckow, Fred Highmore

D

Darnall, Roy E. Brookings
Davis, Richard Brookings
Davis, Clifford W. White
Davis, Fanny Brookings
Davis, Hugh Brookings
Dean, William Cedar Rapids, Iowa
Derungs, Anton Ramona

Dillman, Arthur Revillo
Dillon, Con Sioux Falls
Dobbs, James Egan
Dokken, George Sherman
Drew, Arthur Tempe, Arizona
Duggan, Sherman Reel's P. O., Iowa
Durland, Grace Bruce
Dutcher, Raymond Brookings
Dykins, Edna Ramona

E

Edgar, E. K. Bushnell
Elliott, Ross Brookings
Elliott, Roy Brookings
Emerson, Peter B. Toronto
Engler, A. M. Ipswich
Ercink, Andrew Lidgerwood, N. D.
Erickson, Minnie Bruce
Erstad, Alfred Brookings
Eucker, Clara Clear Lake
Evans, Edna Brookings
Evanson, Olaf Volga
Everson, Chas. Stockholm

F

Fassett, Della Brookings
Fick, Edwin Brookings
Fick, William C. Brookings
Fiksdal, John Webster
Fine, R. C. Hillisborough, Wis.
Fisher, Willie Wessington
Fishback, Van Dusen Brookings
Fjerestad, Alman Estelline
Fjerestad, Carl Estelline
Flanders, Fanchon Brookings
Floran, Archie De Smet
Folken, Dick Lennox

Frederickson, James Viborg
French, Grace Brookings
Frick, Harry Glen
Fryslie, Oscar Vienna
Fryslie, Alfred Vienna
Fulkerson, Vincent Brookings
Fuller, Claude De Smet
Funk, Theodore White Lake

G

Gagel, Gerald Brookings
Gibbs, Margie Brookings
Goddard, Maude Keystone
Goodale, A. R. Brookings
Goodman, G. A. Brookings
Goodman, Martha Brookings
Gould, Leslie Estelline
Grace, Oliver Woonsocket
Graff, Dora Wentworth
Graff, Geo. Wentworth
Graham, Roy Beresford
Graham, Willis Beresford
Granflaten, Lewis Colman
Green, Elmer Veblen
Greenly, Jay H. Brookings
Griffith, Edwin McCook
Grimme, Ida Howard
Grimme, Mabel Howard
Grinde, Martin Dell Rapids
Grove, Mary I. Brookings
Gunderson, Oliver Lake Preston
Gunnison, Viola Brookings
Gurslee, Christ Hendricks, Minn.

H

Hage, Christian F. Toronto
Haggart, Anna Aurora

Hall, Addie Albee
Hall, Roy J. Lake Preston
Halla, Carl Yankton
Halverson, Theodore Brandt
Hanson, Dorothy Brookings
Hanson, Hilda Hendricks, Minn.
Hanson, Samuel Brookings
Harza, Mabel Brookings
Hatfield, Walter Huron
Haugen, Geo. F. Tracy, Minn.
Haven, F. George Mellette
Henneberry, William Orient
Hepner, Frank Brookings
Hepner, Harry Aurora
Heston, E. C. Brookings
Hewer, Ernest Janesville
Hillistad, Alfred Volga
Hinze, Otto Webster
Hodgeson, Verda Huron
Hodson, Charles Powell
Hofstetter, George Bard
Hollister, Arthur R. Erwin
Holt, Clifford Woonsocket
Hooker, Henry F. White
Hoover, Homer Brookings
Hougen, Clarence Wilmot
Hovey, Carl Brookings
Howell, John Sioux Falls
Howg, Edwin Effington
Hoxeng, Alfred Volin
Hoy, Orla La Delle
Hubbart, Minnie Brookings
Hubbard, Walter Mitchell
Hughes, Morris Ipswich
Hyde, Winnifred Brookings

I

Ingvalson, Clara Flandreau

J

Jensen, H. C. Twin Brook
Jensen, Lewis N. Conde
Jesme, Emma Volga
Jesme, Nora Volga
Jesme, Oliver Volga
Johnson, Aaron Bruce
Johnson, Albert Nutley
Johnson, Carl Norway Lake, Minn
Johnson, Harriett Brookings
Johnson, Isaac Brookings
Johnson, John Volga
Johnson, Mary Brookings
Johnson, Oscar Brookings
Johnson, Selma Brookings
Johnson, Tena Brookings
Johnson, Thora Brookings
Johnston, Sam E. Henry

K

Keck, Paul P. Flandreau
Kelan, George A. Brookings
Kelly, Thomas B. Brookings
Kelton, John R. Henry
Kendall, M. Krete Brookings
Kennard, Frank Brookings
Kennedy, Artie Henry
Kennedy, Elbert Henry
Kenney, Katherine Elkton
Kilpatrick, George Houghton
King, John A. Highmore
Kiner, James F. Madison
Kircheffer, Edward Menno
Kirk, Ward Sioux Falls

Kirscher, Bertha Eau Galle, Wis.
Kirscher, Sadie Henry
Kluge, Emma Colman
Knox, Arthur Alpena
*Knox, Alvin Alpena
Knutson, Mabel Brookings
Knudson, Raymond Faulkton
Koch, Albert Eureka
Koerner, Jacob Freeman
Kubitz, Alex. Frankfort

L

Ladd, Horace Brookings
Laing, John C. Sisseton
Lamb, William E. Brookings
Langdon, Alice Parker
Larson, Adolph Volga
Larson, Emily Summit
Larson, Henry Colman
Larson, Lulu Arlington
Lawshe, Fred Brookings
Law, Fred Dell Rapids
Lee, Earl Brookings
Lee, Thomas Baltic
Lee, William Baltic
Lees, Ivie E. Elkton
Lindahl, Clara Troy
Lindahl, Edward Strandburg
Lodge, Nina Madison
Lohr, Eva Estelline
Loken, H. Oscar Webster
Longen, Jacob Webster
Lorenzen, T. C. Upland
Loucks, Anna Altruria
Loucks, Elizabeth Altruria

*Deceased.

Lowe, Oscar Sisseton
Lukken, Lewis Canton

M

McCrea, Bessie Bonilla
McCullen, C. D. Highmore
McCurdy, Walter Letcher
McElmurry, Rilla Brookings
McKeown, Earl Elkton
McIver, Milton Highmore
McMaster, Mary Gettysburg
Mahre, Ole Dell Rapids
Markham, Henry Yankton
Mathews, Harry E. Brookings
Mattice, Albert Sedro, Wash.
Megard, Ingemon Astoria
Meyer, Gregory Ethan
Miller, Ernest Brookings
Miller, Nellie B. Newton, Ia.
Miller, Ralph Brookings
Miller, Shirley P. Brookings
Moe, Amy Astoria
Moe, Ole Colman
Moen, Adolph
Molskness, Sverre Colman
Moore, Chas Bonilla
Moore, Lucy Volga
Moore, Stanley Volga
Morton, Grant J. Summit
Mullaney, James Wentworth
Murphy, Matt Brookings

N

Negus, Arthur Davis
Nelson, Arthur Hurley
Nelson, Clarence Volga
Nelson, Lewis Hurley

Nelson, Nels O. Butler
Nelson, Otto Hurley
Niederauer, Burt Faulkton
Nopens, Floyd Dover
Norby, Alfred Bristol
Norton, Frank A. Centerville
Norton, Rachel Centerville
Nupens, Conrad Vienna
Nystrom, Gustaf Athelwold

O

Odland, John Parker
Odland, Lewis Parker
Olberg, Henry Brookings
Oldre, Martin Kenneth, Minn.
Olson, Ames Hendricks, Minn.
Olson, Harry Brookings
Olson, Orveu Hendricks, Minn.
Orth, Dora Flandreau
Orth, Elsie Flandreau
Otterness, Jens M. Brookings

P

*Paddock, John C. Houghton
Paulson, Nels Talcott
Pease, Walter Lyons
Peirce, Esther Brookings
Peirce, Ruth Brookings
Pepal, Frank Bendon
Perley, Elton Flandreau
Perry, William Brookings
Peirson, Iver St. Mary's
Peirson, Oscar St. Mary's
Peterson, Alfred Brookings
Peterson, Charles Volin
Peterson, Harry Bradley
Peterson, Jessie Brookings

Peterson, Oscar Brandt
Phillips, Arthur Rockwell, Iowa
Phillips, Florence Brookings
Phillippi, Ellis Northville
Pickles, Chester E. Clark
Port, August G. Milbank
Potter, Olive Webster
Pottinger, George Valley Springs
Price, George Langford
Price, Maude Langford
Prowse, Genevieve Brookings

Q

Quael, Bertha Brookings

R

Reeves, J. Marshall Alexandria
Reich, Carl Tunnel City, Wis.
Reich, Rose Tunnel City, Wis.
Remme, Theodore Kenneth, Minn.
Reynolds, Llewellyn Bangor
Rice, Ethel Park Rapids, Minn.
Richardson, Chas. Burch
Ritchie, Paul Raymond
Roberts, Mrs. Hattie Brookings
Roberts, Henry A. Webster
Rogness, John A. Astoria
Ronning, Oscar Brookings
Rude, George Brookings
Rumrey, Chester Columbia
Runey, Madge Brookings
Ruste, O. E. Ramsey
Ruth, Thomas De Smet
Rydjord, Mabel Lousberry
Rydjord, Peter Lousberry
Ryerson, Inga Brookings

S

Salmon, Cecil Spencer
Sanborn, Ethel Clear Lake
Sandell, Albert Houghton
Sanderson, Eugene Aurora
Sanderson, Everett Aurora
Sannes, Christine Lily
Sarvis, Hubert Highmore
Sarvis, Roscoe J. Highmore
Saugstad, Olive Hitchcock
Sayre, Harry Brookings
Schaphorst, William Brookings
Schilck, Adolph Groton
Schley, Alfred B. Groton
Schoenwether, Albert Lake Preston
Schoepp, Lenn Henry
Schultz, Jennie Aurora
Schultz, William Rockham
Scofield, George Flandreau
Scott, Frank Kronsburg
Scriver, Althea Dell Rapids
Seeger, Adolph M. Marietta, Minn.
Seeley, James A. Bonilla
Seide, Louis M. Milbank
Serles, Wallace Canova
Shaw, William B. Oldham
Sherwin, Ralph E. Brookings
Shjegstad, Guy Dell Rapids
Sisson, William Tyler, Minn.
Skiff, Ethel Brookings
Skinner, Frank Revillo
Skotvold, Enoch Centerville
Slocum, Ina Herreid
Smemoe, Joseph Sherman
Smith, E. H. Faulkton

Smith, Gertrude Faulkton
Smith, Nellie D. Brookings
Smith, Roy Faulkton
Smith, Will G. Sioux Falls
Smith, Sherman Madison
Smith, William Wilmot
Smith, Pearl Brookings
Smoger, Alex. Merton
Sneve, S. C. M. Brookings
Sneve, Elizabeth Brookings
Snyder, William P. Arlington
Soreng, Edgar Dexter
Sorenson, John Hurley
Spurling, Ethel Brookings
Spurling, Roy Brookings
Steen, Emma
Steiner, Fred W. Woonsocket
Stevenson, Clara Brookings
Stoner, J. Burch Brookings
Stratton, David Canton
Strevel, B. L. Faulkton
Suelflow, Martin White Lake
Sundet, Lewis Brookings
Svaren Anna Volga
Svaren Christine Volga
Svaren, Hannah Volga
Sveen, Alma Brookings

T

Tayler, A. C. Brookings
Taylor, Mrs. Lina Brookings
Teuber, Anton Huron
Thogersen, Arthur Yankton
Thogerson, Henry Yankton
Thompson, Clarence Dell Rapids
Thompson, Frank Brookings

Thompson, A. W. Brookings
Thompson, Tillman Dell Rapids
Thompson, Gottfried Dell Rapids
Thornber, Edith Brookings
Thornber, Jessie Brookings
Thorson, Mary Flandreau
Throop, Lotta Brookings
Tobin, N. W. Madison
Towne, Ralph Mellette
Tracy, Earl H. Sioux Falls
Traver, Bertha Highmore
Trooien, O. N. Prairie Farm
Trumm, Fred A. Hayti
Trumm, M. W. Hayti
Trumm, Robert Hayti
Trygstad, Belle M. Brookings
Trygstad, Carl Brookings
Tucker, Bessie Brookings
Tullar, Elmer Lennox
Turner, Joseph Brookings
Tyler, John E. Hartford

V

Van Camp, Shreve Highmore
Van Dusen, Fred J. Milbank
Van Nice, H. Vernon Flandreau
Van Osdel, Eva Mission Hill
Vickerman, Roy E. Brandt

W

Waldron, John P. Cavour
Walker, Warren Howard
Walter, L. Erving Alexandria, Minn.
Walters, Daisy Bruce
Walters, Verner Bruce
Waltner, J. J. Freeman
Ware, Earl Elkton

Weiland, Joseph Marion
Weiseth, Edwin Colman
Weisflock, Theodore Kimball
Welby, J. E. Mission Hill
Welch, Hazel Brookings
Welker, Jay Wessington
Wenner, Roy Garden City
Westcott, George Brookings
Westcott, Ruth Brookings
Westrum, Oscar Volga
Whistler, Fred Watertown
White, Chas. Dos Cabezos, Ari.
Whiting, Florence Brookings
Weibers, Fred Centerville
Willie, Harry Brookings
Williams, Mrs. G. A. Brookings
Williams, Geo. S. Volga
Williams, Harry Brookings
Williams, Percy Brookings
Williams, Losey Brookings
Williams, Mabel Watertown
Williams, Will Watertown
Williamson, George Artesian
Wilson, Frank Brookings
Wilson, Roy Brookings
Wood, Harry Doland

Y

Yeandle, Arthur C. Highmore
York, Bert A. Winthrop
Young, Alfred J. Athol
Youngberg, Guy Volga
Youngberg, Mamie Volga

Total—469.

*Deceased.

STUDENT ORGANIZATIONS.

INDUSTRIAL COLLEGIAN.

William Smith Editor-in-Chief
William Binford Business Manager

ATHLETIC ASSOCIATION.

Thos. H. Ruth President
L. Erving Walter Secretary
Clarence Thompson Treasurer

ORATORICAL ASSOCIATION.

Fred Cuckow President
Krete Kendall Secretary
Ralph Miller Treasurer Western League of Oratory

BAND.

J. P. Mann Leader

YOUNG MEN'S CHRISTIAN ASSOCIATION.

William Smith President
Arthur Beatty Secretary

YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

Laura Bower President
Bessie Chappell Secretary

ATHENIAN LITERARY SOCIETY.

Abbie Carpenter President
R. G. Burghardt Secretary

MILTONIAN LITERARY SOCIETY.

Howard Anderson President
Ruth Peirce Secretary

ECLECTIC LITERARY SOCIETY.

William Binford President
Rose M. Reich Secretary

FRANKLIN LITERARY SOCIETY.

Arthur Beatty President
W. E. Corbin Secretary

MYSTIC CIRCLE DEBATING CLUB.

Sherman Duggan President
Lewis N. Jensen Secretary

ART CLUB.

Shirley Miller President
Laura Bower Secretary

PHARMACY CLUB.

F. A. Norton President
Fred Steiner Secretary

S. D. A. C. CHORAL UNION.

J. P. Mann Leader
Louise Seide Secretary

MILITARY ROSTER.

COMMANDANT.

J. C. McArthur, Captain Twenty-Eighth Infantry, U. S. A.

BATTALION AND FIELD STAFF.

Major Cadet Albert A. Johnson
First Lieutenant and Adjutant Cadet Ralph L. Miller
Second Lieutenant and Quartermaster.... Cadet Fred A. Coller

NON-COMMISSIONED STAFF.

Sergeant Major Cadet Con Dillon
Color Sergeant Cadet Guy E. Youngberg

COMPANY "A".

Captain Cadet Arthur W. Drew
First Lieutenant Cadet S. M. Duggan
Second Lieutenant Cadet Ames G. Olson
First Sergeant Cadet W. N. Cooley
Quartermaster Sergeant Cadet Fred Van Dusen
Sergeant Cadet Charles White
Sergeant Cadet Walter Hatfield
Sergeant Cadet Guy Boyden
Sergeant Cadet Horace Ladd
Corporal Cadet George Williams
Corporal Cadet Floyd Austin
Corporal Cadet Homer Hoover
Corporal Cadet Losey Williams
Corporal Cadet Ellery Chilcoot

COMPANY "B".

Captain Cadet August G. Port
First Lieutenant Cadet Carl O. Trygstad
Second Lieutenant Cadet Harold Allison
First Sergeant Cadet Alman Fjerestad
Quartermaster Sergeant Cadet A. A. Thogersen
Sergeant Cadet Fred Law
Sergeant Cadet Arthur Beatty
Sergeant Cadet George Haven
Corporal Cadet Arthur Phillips
Corporal Cadet Albert Schoenwether
Corporal Cadet Ross Elliott
Corporal Cadet Arthur Knox



PART TWO.

ILLUSTRATIONS.



A VIEW OF THE CAMPUS.





EXPERIMENT STATION SOIL PHYSICS LABORATORY.





THE SHEEP BARN.





REPRESENTATIVES OF THE COLLEGE HERD.



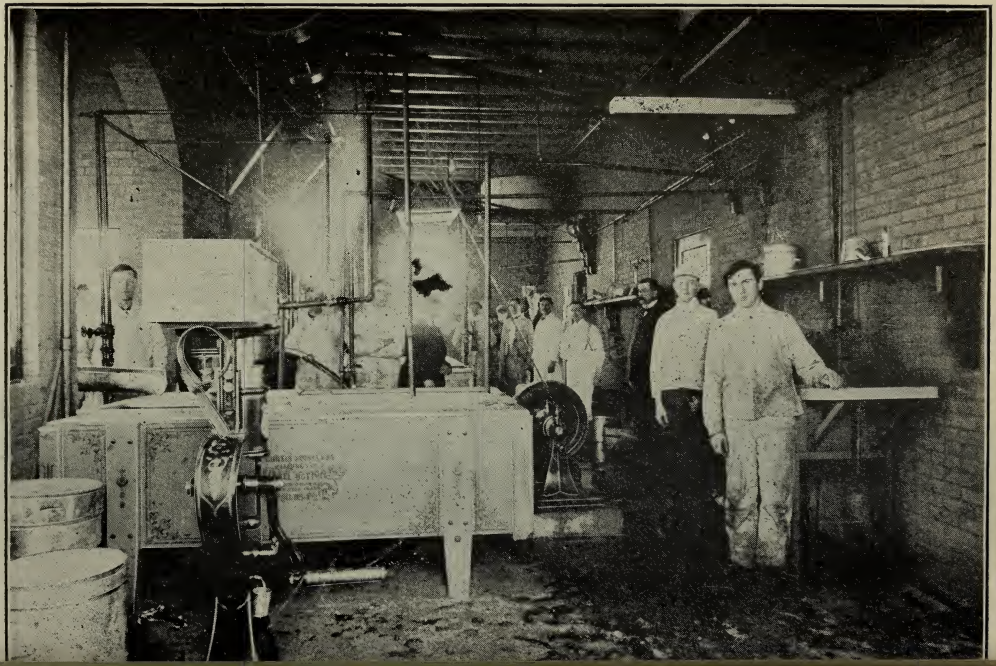


POLAND CHINA HOGS.



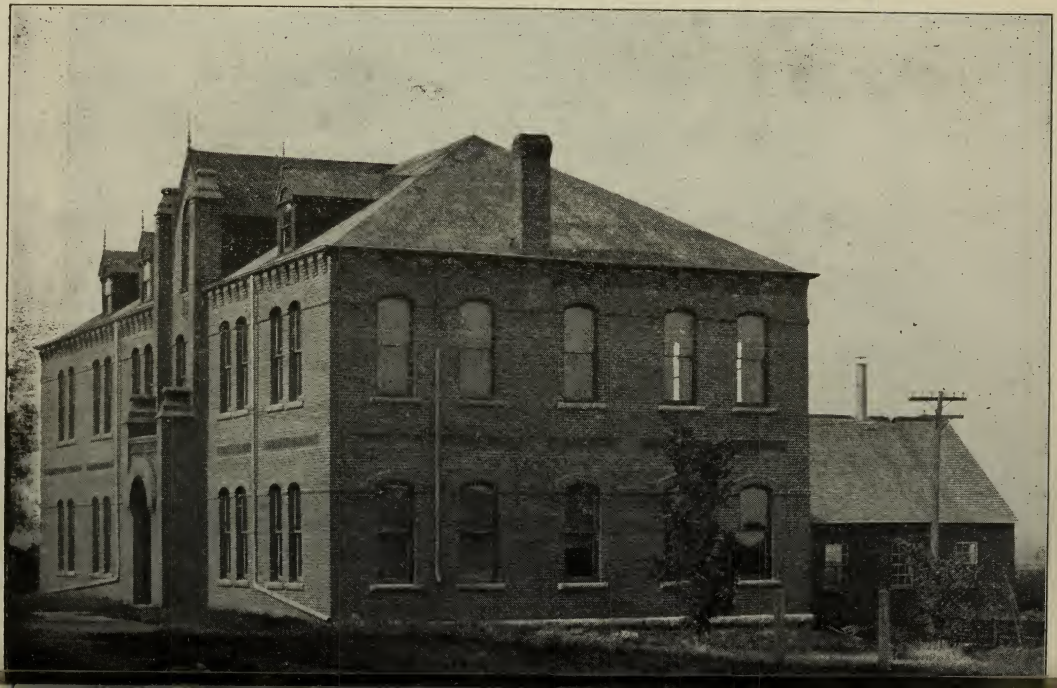


TESTING MILK.



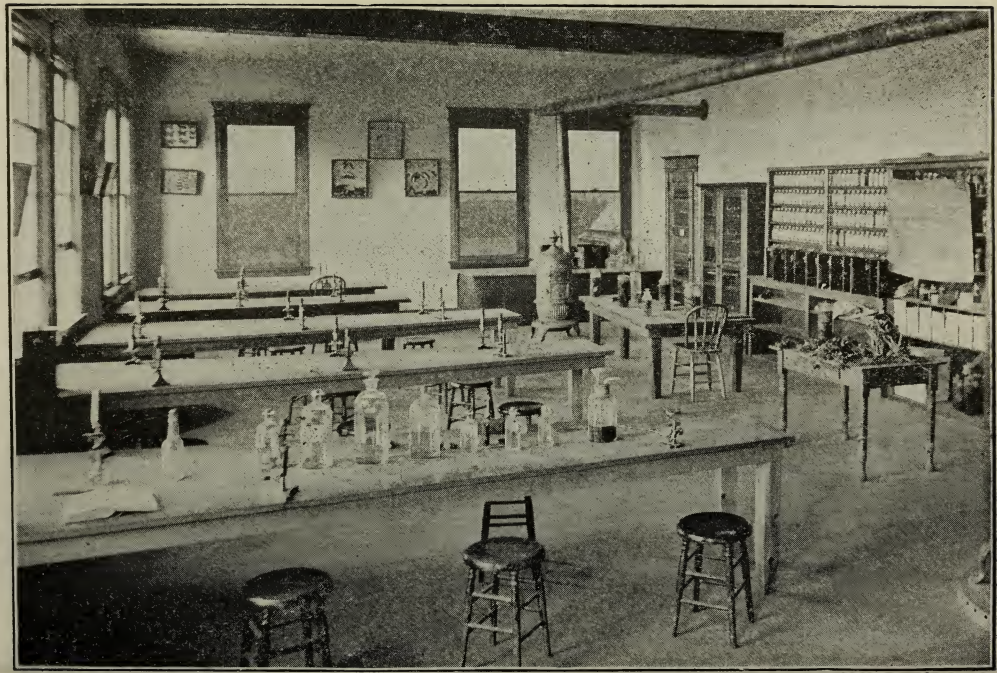


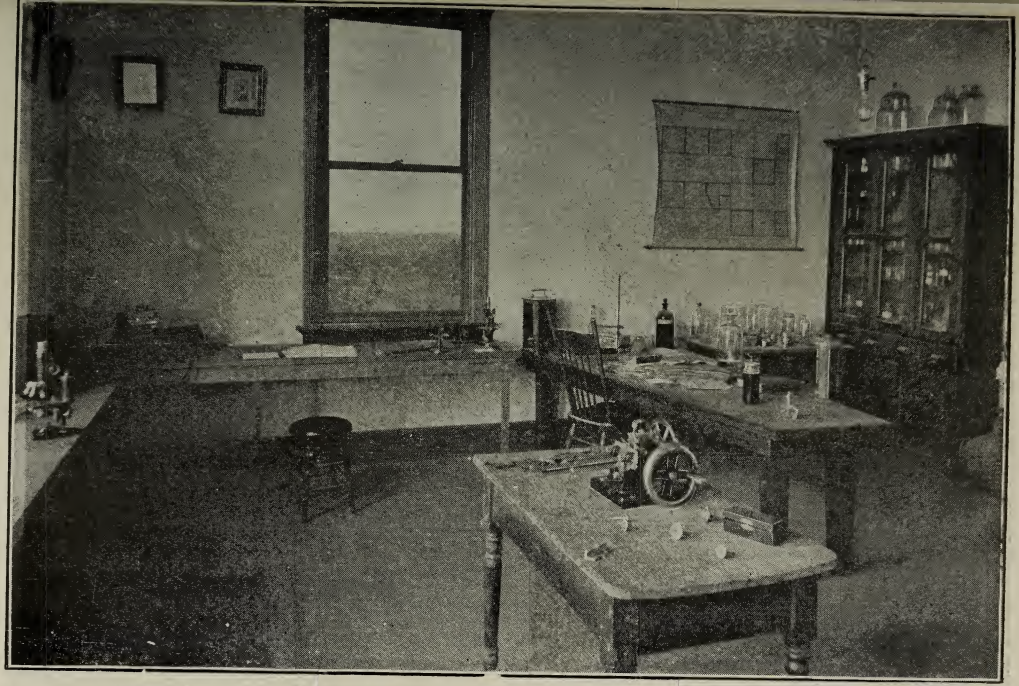
THE NEW PLANT BREEDING BUILDING





AN INTERIOR VIEW OF THE GREEN HOUSE.





THE ADVANCED BOTANICAL LABORATORY.



THE CHEMICAL LABORATORY



GEOLOGY CLASS ROOM.



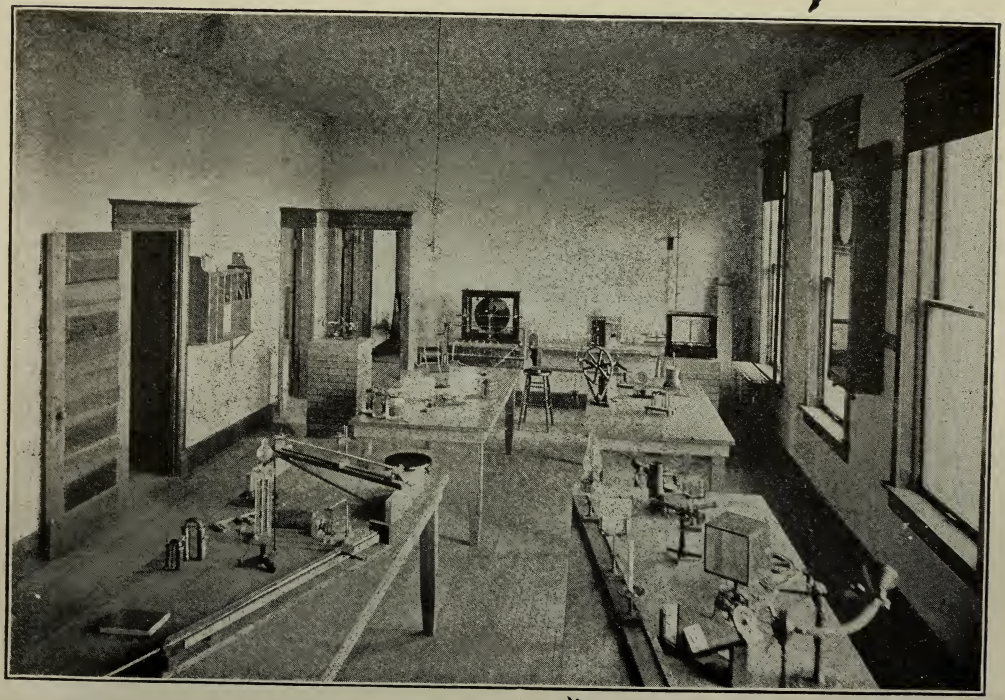


A FIELD SURVEYING PARTY.

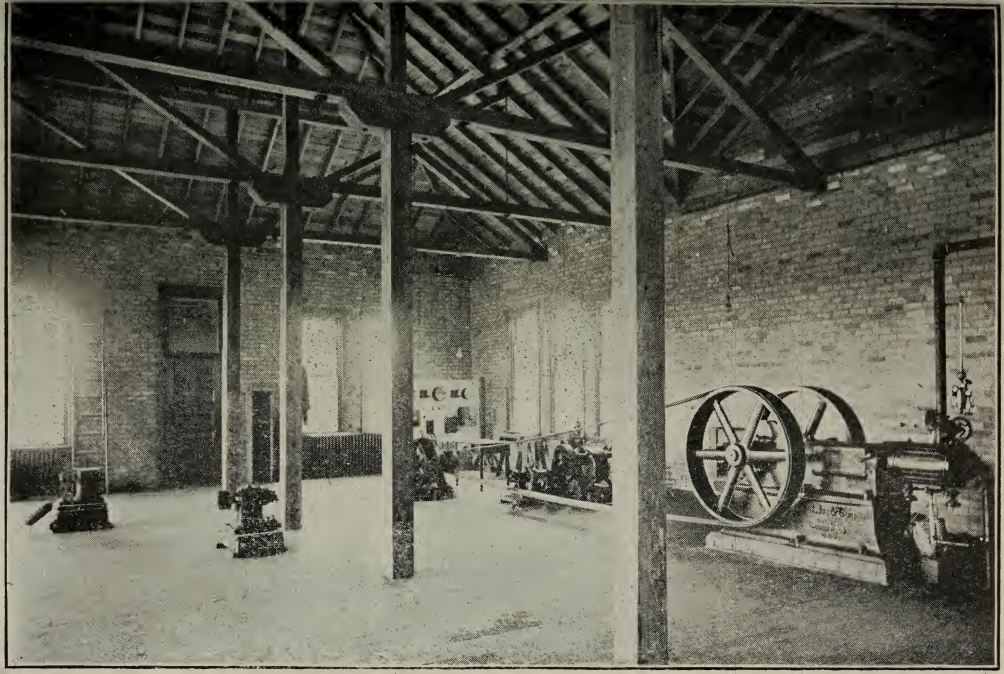




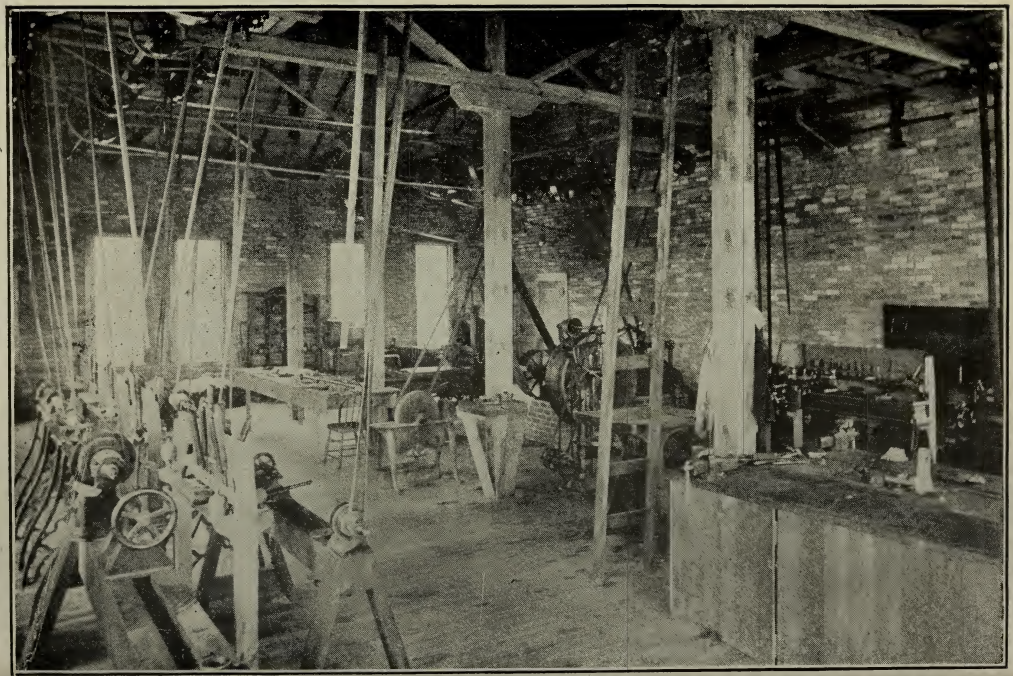
THE GENERAL PHYSICS LABORATOBY.



ADVANCED PHYSICS LABORATORY



SOME OF THE DYNAMOS.

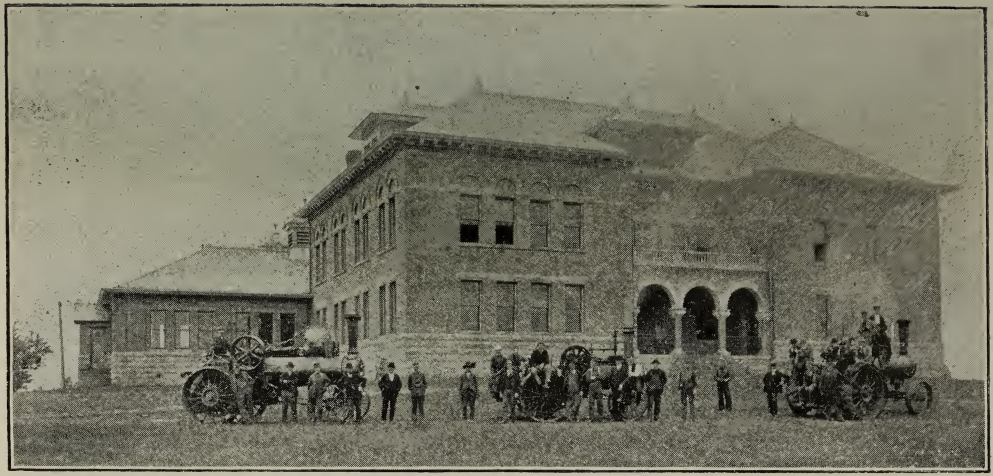




THE CARPENTER SHOP.



THE BLACKSMITH SHOP.

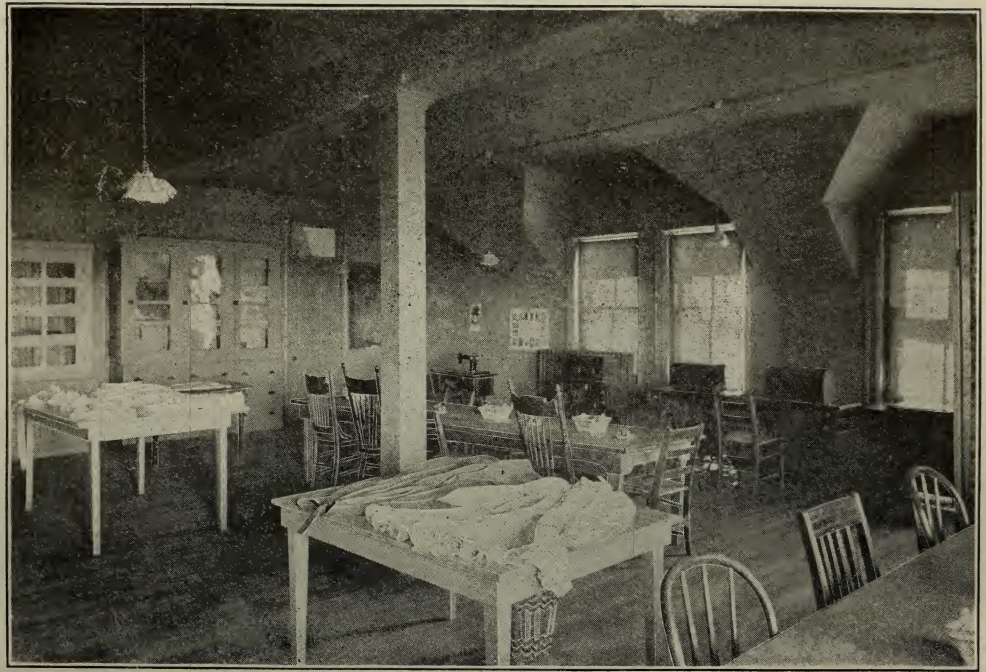


ENGINE PRACTICE.





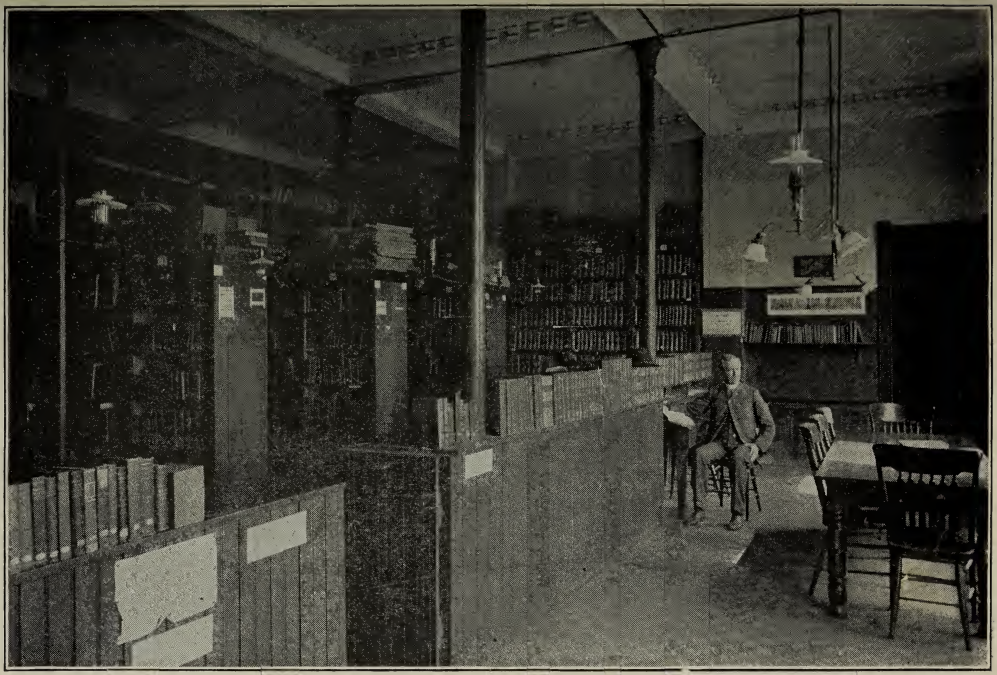
THE DOMESTIC SCIENCE KITCHEN.



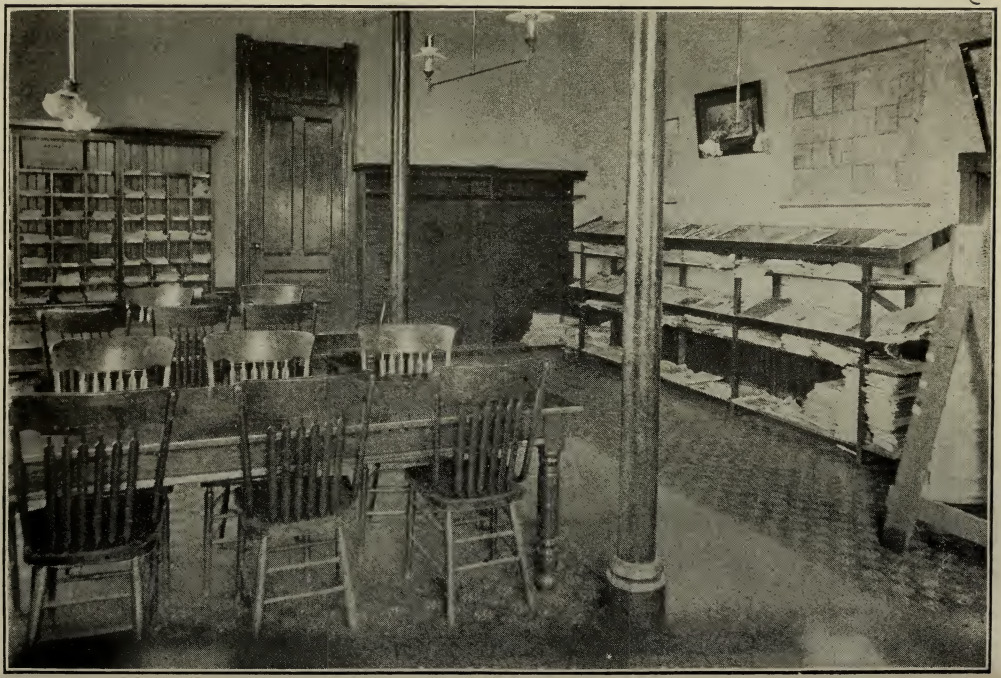


IN THE ART ROOM.





THE LIBRARY BOOK ROOM.





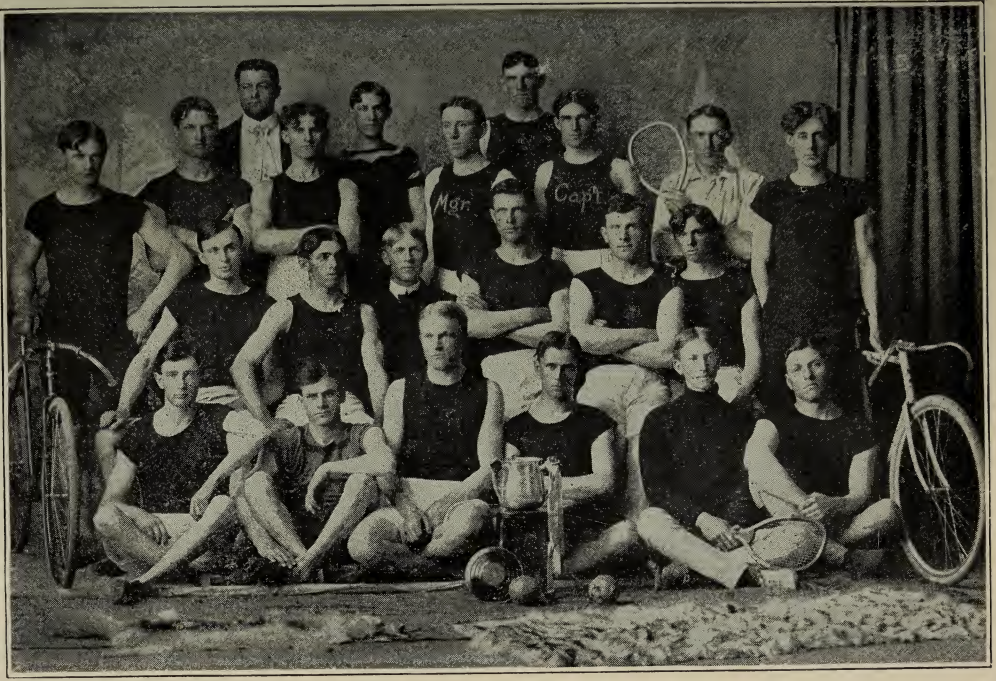
COMPANY "B".





THE DRILL HALL AND GYMNASIUM.





THE TRACK TEAM.



BASE BALL TEAM.

thousand acres of land were set aside as an endowment for the South Dakota Agricultural College. These lands are not yet quite all selected and none have as yet been sold. A small amount is now being received yearly as rental from the selected lands.

No school lands can be sold for less than ten dollars per acre, so that these lands, when sold, will probably yield an endowment of two million dollars, the interest from which will be sufficient for the needs of the College.

The "Morrill Act" passed by Congress in 1890 provides a yearly appropriation for "the more complete endowment and support of Colleges for the benefit of Agriculture and Mechanic Arts." Under this act the College receives from the general government $15,000 for the first year; $16,000 for the second; $17,000 for the third, and so on until the annual amount reaches and remains at $25,000 during the pleasure of Congress.

The "Hatch Act" passed by Congress provides for the establishment of Agricultural Experiment Stations in connection with Agricultural Colleges, and allows $15,000 per year for the maintenance of the same.

The state legislature makes biennial appropriations for the support of the College. Appropriating at its last session more than *one hundred thousand dollars.*

5. General Policy.—It is the policy of the institution to make itself in truth a part of the common school system, first, by continuing the work of the young people from the point in their education where the lower school stops, thus giving them an opportunity to become liberally and practically educated within the boundaries of their own state; second, by assisting in the training of public school teachers, especially in the various sciences.

The College also desires to assist, as far as its resources will allow, in the self improvement at their homes, of the people of the state. To this end where half a score or more intelligent persons express a desire to study along some definite

line, they will be advised as to the course of reading to pursue, and, if possible, be furnished with a lecturer for one or more lectures after such reading has been faithfully completed. These home reading courses are in print and may be obtained upon application to the president. It is believed that this reading course is a more systematic, logical and effective method of outside instruction than promiscuous farmers' institutes where the attendance as a rule is largely made up of those who have no especial preparation and are present solely to be entertained.

6. Experiment Station.—This department is organized under the Hatch act of Congress which appropriates fifteen thousand dollars from the United States treasury each year for its maintenance.

"It shall be the object and duty of said experiment stations to conduct original researches and verify experiments on the physiology of plants and animals,"—enumerating some twenty other lines of research,—"and such other experiments bearing directly on the Agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states. To aid in acquiring and diffusing among the people of the United States useful and practical information on the subjects connected with Agriculture." The South Dakota station conducts its investigations principally upon the following lines: Live stock, soil, field experiments, greenhouse work, trees and small fruits, chemistry of plant growth and foods, and economic botany, entomology and zoology.

In planning the work of the station the main object sought is to assist the agricultural interests of the state. Education is derived from this in two ways; first, from the student's observation of the actual work; second, by reading the accounts and results of the work which are published in the form of bulletins and are available to any one applying.

B—EQUIPMENT.

1. Campus.—The College campus of thirty acres is beautifully located on an eminence within the corporate limits of Brookings. Under the charge of the horticultural department the campus, ornamented with choice and tasteful varieties of trees and shrubs and laid out with necessary drives and walks, is a good example of landscape gardening. Adjoining on the rear is a fifty acre plat which is devoted to horticultural gardens and the United States forestry experiments. This portion is laid out regularly in suitably sized plats with longitudinal streets at appropriate distances apart, thus giving a beautiful and symmetrical effect to the observer from the College buildings.

2. Buildings.—The oldest building on the campus, a three story brick structure known as the "Central Building," was completed in 1885, and is devoted to administrative and instructional purposes. The "South Building," also a three story building, is occupied principally by the experiment station laboratories. The "North Building" is a four story brick building, the first floor of which is used as a chapel room, the other two floors furnishing quarters for the Art and Domestic Science department. The "Chemistry and Pharmacy Building," the "Drill Hall" and the "Creamery" are all two story buildings of modern design, and well equipped with apparatus.

The "Engineering Hall," the "Plant Breeding Building" and the "Greenhouse," were built two years ago, and by their substantial and imposing appearance, add much to the beauty of the campus, and furnish room that has long been needed by the departments which occupy them.

Appropriations were made by the last legislature for the construction of a large barn, and a modern heating plant.

3. Farm.—Set apart as the College farm is a tract of three hundred and twenty acres near the campus, about sixty acres of which is used by the Agricultural Experiment Station as an

experimental farm. Here the field experiments with field crops, seed germination, and soil preparation are conducted, and the student electing it can witness and actually participate in this scientific work. The remainder of the farm is used as a model stock and dairy farm under the direction of the professor of animal husbandry. Practical work and experiments involving the best farming practices for this region are given the students.

4. Dormitories.—Originally the institution provided dormitories for both sexes. But the attendance has increased so much more rapidly than the class room facilities, that it has been necessary to convert the dormitories into rooms for the departments, so that now no such living arrangements in connection with the College are provided.

5. Laboratories.—The work of the institution being so largely scientific in nature, well-fitted laboratories have been provided in all those departments where their use is made necessary by the most modern and approved educational methods. The farm with its equipment together with the horticultural gardens and the greenhouse serves as a laboratory for the departments of Horticulture and Agriculture.

6. Gymnasium.—The spacious gymnasium for the boys and the commodious physical culture rooms for the girls are well equipped with dumb-bells, Indian clubs, chest weights and other apparatus to which additions are being made from time to time. Both of these departments have connected with them bath and toilet rooms of the most approved design, and the physical training is under the direction of competent instructors.

7. Athletic Grounds.—In connection with the gymnasium a tract of land leased by the College is used as a place for holding outdoor exercises and sports of an athletic character. These grounds are enclosed with a high board fence, and a comfortable amphitheater affords a large seating capacity to spectators.

8. Library and Reading Room.—The library, occupying rooms on the first floor of the Central Building, contains about six thousand bound volumes and as many pamphlets. The institution being a repository for the Government, it contains quite a number of the governmental publications. Care has been exercised in the selection of books in order that each department may have proper books of reference at the disposal of the students taking work in that line. The books are arranged according to the Dewey system of classification, and the card catalogue has been completed up to date, thus facilitating the use of the library. The reference portion is well supplied with proper books of reference. The files of all the standard scientific and literary magazines are kept bound. The reading room portion is supplied with the leading periodicals and newspapers. The library is nearly all the time, day and evening, at the disposal of students for the purpose of study and reading.

9. Museums.—The idea that museums are valuable as educational factors only as they furnish illustrative material for study has obtained in the collection of the various specimens and their arrangement in the several department museums. The Zoological, Botanical, Geological, Art, and Engineering departments have made especially good beginnings in getting together material for that purpose. Constant additions are being made, thereby increasing their worth as adjuncts to laboratory work. The different collections are kept in the departments to which they belong. Permanent and commodious rooms for the museums are projected and it is hoped they will materialize in the near future.

10. General Study Room.—A general study room for the young ladies, in conjunction with the necessary retiring rooms and toilet facilities, occupies part of the basement of the North building. The ladies of Brookings have very gen-

erously furnished part of the fittings necessary to its homelik appearance. The young gentlemen are also provided wit similar rooms in the basement of the Central building.

11. Lecture and Class Rooms.—The class rooms are fitte to accommodate from thirty to fifty students each. Lectur rooms are fitted with arm-rest chairs for ease in taking notes The main lecture or assembly room is provided with oper chairs for seating about four hundred, and a fine electric dis solving projection lantern for illustrative purposes.

12. Sanitary Conditions.—Recently, efforts have bee directed to improving the sanitary conditions about the cam pus. The old methods have been superseded by sanitary plumbing throughout the building and a new sewerage dis posal plant. The water supply is one of the very best, th water being of good quality and very pure. The rarity o zymotic and infectious diseases among the students is a proo that the sanitary conditions are excellent.

13. Heating.—Good heating arrangements are a necessity in almost any climate but in a cold climate their importanc increases. The main buildings are all heated with steam gen erated in a central heating plant. This plant also furnishes steam for running the machinery in the shop and generating electricity for lighting. Largely for purposes of cheerfulness and ventilation, fireplaces are provided in all the offices.

14. Lighting.—The College owns and controls its own electric light plant, thus making the light at all times available and economical. Many of the rooms and all the laboratories are provided with gas, which for purposes of illumination is used in Wellsbach Burners, making a brilliant light.

15. Postal Facilities.—The College furnishes first-class postal facilities, the mail of the students being delivered in one of the buildings at convenient times during the day, mak- ing it unnecessary for them to walk to the city postoffice.

C—ADMINISTRATION.

1. Governing Board.—By an act of the legislature approved March 10, 1897, provision was made for the appointment of the "Regents of Education," who should have charge of all the educational institutions of the state.

The law is, "The Governor, by and with the consent of the senate, shall appoint five persons of probity and wisdom from among the best and best known citizens, residents of different portions of the state, none of whom shall reside in the counties in which any of the state educational institutions are located, who shall be designated the regents of education." The terms of office of these regents, when first appointed were of different lengths and after the first terms, are each six years, thus making it a continuous body. Vacancies are filled by the Governor during the recesses of the senate. "The board shall organize by electing one of their members president, and by the election of a secretary. Thus qualified and organized they shall have authority to make such rules as are necessary for their own government as a board and shall immediately assume the exclusive control and management of all the educational institutions which are maintained either wholly or in part by the state." Along this line the powers and duties of the regents are defined, among which important ones may be mentioned, to employ or dismiss members of the different faculties and other agents, to determine the proper number of teachers in said faculties, also their compensation and terms of employment, to establish departments, to settle upon courses of study, to determine the rules to be enacted for the government of the students, to decide upon text books to be used, to fix tuition fees, to guard against unwise duplications of departments, to confer degrees, to control the United States Experiment Station,and to promote education among the farmers by providing for institutes, in fact to make all regulations as to the executive and instructional functions of the educational institutions

of the state. The regents govern the College largely through a regent committee.

2. FACULTY.—The faculty, consisting of the president and professors, all of whom are elected by the regents, determines in large part the general policy of the college. The professors are heads of the different departments of instruction which they represent and are responsible to the president, who is in charge of all matters of administration. The president, in turn, is responsible to the regents for the whole work of the institution. In order to aid the president in his executive duties, he appoints, at the beginning of each college year, certain faculty committees, which take up such work as may be assigned them by the president and faculty and thus greatly facilitate the transaction of business and economize the time of the faculty. In the absence of the president the vice chairman of the regents committee on classification and course of study, or the ranking member of that committee present, acts in his place. (For list of committees for 1903-1904 see page 6.)

3. DEPARTMENTS.—The educational and experimental work is performed by the following departments, the work and equipment of which are described in detail under Part IV.

DEPARTMENT.	ABREVIATIONS.
Agricultural and Animal Husbandry	Ag.
Botany	Bt.
Chemistry	Ch.
Agricultural Engineering	Ce.
Commercial	Cl.
Domestic Science	Ds.
English	Eh.
Experiment Station	Ex.
Geology and Agronomy	Gl.
History, Economics and Philosophy	H-P.
Horticulture	Ho.
Languages (French, Latin and German.)	Ln.

Mathematics and Astronomy Ms.
Mechanical Engineering Me.
Military Mt.
Music and Physical Culture Mu.
Pharmacy Py.
Physics and Electrical Engineering Ph.
Preparatory Pr.
Zoology and Veterinary Medicine Zo.

4. Student Affairs.—Students are allowed wide latitude in carrying on affairs which vitally concern themselves, such as athletic, literary, musical and social organizations. The faculty, in all these matters, retains an advisory interest and aims to assist the students in every possible way in making these elements especially helpful to the student body as a whole. In the matter of social enjoyments the faculty is disposed to allow a reasonable amount of time for recreation, and endeavors to contribute as far as possible towards making the students happy and contented.

5. Required Exercises.—There are certain requirements in the way of work required of every student, among which are military exercises, physical culture and rhetoricals. These subjects are thought to be of sufficient importance that every student can take them with profit.

6. Students' Living Arrangements.—The faculty maintains the right to pass upon the living arrangements of every non-resident student. Residents of the town with whom students are boarding or lodging are requested to co-operate with the faculty in the efforts to improve the general condition of the students by exercising over them a careful supervision and reporting to the faculty any misconduct on the part of the students which may come to their notice. Upon coming to Brookings students should report at once to the president, who will furnish all possible information with reference to their living arrangements.

7. Student conduct.—The chief end of school life being to obtain thorough mental and moral discipline, it becomes incumbent upon the faculty to make the conditions as far as possible conducive to that attainment. No set regulations are expected to cover every contingency arising, but it is necessary that all students recognize the fitness and importance of such restraints as are in force, and co-operate in securing their observance. In the absence of any rule applying, the student's own good judgment should suggest the proper procedure. Deportment is more fully treated under "D".

8. Tutoring.—Students absent from class or College exercises or otherwise being unable to keep up with the work of their classes, will at the suggestion of the head of the department arrange with a regular tutor of that department for assistance.

D—SPECIAL INFORMATION FOR STUDENTS.

1. Time to Enter.—Students are admitted at any time and assigned to such classes as they are found best fitted to enter, but it is much better to commence at the beginning of the college year or as soon thereafter as possible. No reduction in college fees is made when the student enters after the beginning of a term, and if a student enters late he will not under any condition be allowed to hold a class back. If a tardy beginning is imperative the student must arrange with a tutor to assist him in bringing up his work, in order that he may go on understandingly and without hindrance to the class.

2. Expenses of Students.—No young person should be deterred from obtaining a liberal education when such advantages as this college offers can be had at a nominal price. The registration fees are four dollars per term and are payable at the time of registration. Books and stationery are furnished by the student. A laboratory fee of one dollar per term is charged for the use of each laboratory in which a student takes

work. An estimate of the yearly expenses of a student is given below in three grades, viz:

	LOW.	AVERAGE.	LIBERAL.
Tuition and Incidental Fees	$12.00	$12.00	$12.00
Board and room	110.00	130.00	160.00
Laundry	12.50	15.00	25.00
Books and Stationery	15.00	25.00	35.00
Laboratory Fees	0.00	3.00	8.00
	$149.50	$185.00	$240.00

Male students are expected to purchase uniforms, which range in cost from $12.00 to $18.00, and female students must furnish themselves with special costumes, which are not necessarily expensive, for use in physical culture.

3. Terms and Vacations—The regular work of the College is carried on continuously during the Fall, Winter and Spring terms, which are designated in the schedule as F. W. S. The principal vacation of the year occurs in the Summer, from the middle of June nearly to the close of September. The work of the Fall term begins in 1903, on September 23rd, and continues until December 16th, a period of twelve weeks of five days' work each. The Winter vacation will begin at noon on December 16th, and last until noon January 4th, 1904, when the work of the winter term will begin. The Winter term will last from January 4th to March 25th, a period of twelve weeks of five days' work each. The Spring term will begin March 28th, continuing twelve weeks, of five days' work each, and ending June 16th, after all the exercises of commencement week are completed. The date indicated as the time when a term will begin refers to the day that recitation and laboratory work is begun. The matter of classifying should all be arranged before this date and such provisions is made in the calendar announcements.

4. Living Arrangements.—Since the discontinuance of the dormitory in the "Girls' Cottage," no boarding facilities in connection with the College have been provided. Every

effort is made, however, by the officers of the institution to secure suitable and satisfactory boarding places for students and a special faculty committee has this matter in charge.

Good rooms can be secured in the city at private houses or hotels for 50 cents per week and upwards. There are also many places where rooms and board can be obtained at reasonable rates. A list of approved available places for boarding or rooming can, at any time, be obtained from the president of the College. The Christian Associations make it a point at all times to assist new students in finding proper living accommodations.

5. Student Labor.—The arrangement and amount of College work is such that any reasonably apt student should have at least two hours per day for recreation or outside work. The terms are so distributed through the year as to give the longest period of vacation possible in the summer, thus enabling students to earn money. There is also a limited amount of paid labor about the institution which can be done by students and it is the policy of the regents to give as much work to deserving students as is consistent with the best interests of all. However, no one should expect to earn his entire expenses while at college and doing school work, or be assured of an income in advance from paid labor.

6. Scholarships.—The following article from the law, defining powers and duties of the regents of education is self-explantory. "The regents of education shall fix all rates of tuition and of other fees to be paid by students, but such rates must be the same in all the different institutions. They may receive free of tuition two students appointed by each senator and one by each representative of the state legislature in any one of the institutions under their control, provided that the period for which appointment was made shall expire with the term of office of said senator or representative and provided that such appointees shall comply with all the rules and re-

quirements of the institution which they desire to enter. No student, however, shall receive any other gratuity whatever." The regents of education make this article operative in the case of this institution.

7. Co-Education.—Recognizing the value of industrial training as a feature of a practical institution for the masses, the College authorities have provided the various shops and laboratories in which the young men of the state may become familiar with the use of the different tools required in the principal mechanical industries. These special facilities are not confined to the young men, but special departments such as Domestic Science, Art and Music have been established, so that the young lady students may have opportunities to fit themselves for a keener appreciation of the realities and enjoyments of life in the home, the school room, the store, the office or the factory. The young woman will profit as much by the introduction of rational methods into her education as the young man, and while the shops, studios and laboratories may be used in some instances by the young man, and in others by the young woman, they are all open to both and in most cases students of both sexes will be seen working side by side. Instead of military drill the young lady students are required to take physical training.

8. Military requirements.—The national law organizing and endowing these agricultural colleges requires that military science shall form part of the instruction offered. For the regulations governing these requirements, see Military Department, Part IV.

9. Physical Culture. Female students are required to take Physical Culture twice a week for the first three continuous years of the time they are students in the institution. Students taking Physical Culture will furnish special costumes for the same as indicated by the instructor. In regard to ex-

cuses from physical culture, the same rule holds as in the case of military exercises.

10. Chapel Exercises.—For a short period each college day the students are assembled in the chapel room to hear announcements and to attend exercises which are of a devotional character, except on Tuesdays when a special program is given, usually consisting of an address by some competent person or a short news review of the week.

11. Public Entertainments.—In all cases of public entertainments the students taking part are required to submit their exercises first to the officer regularly in charge of such work and to rehearse before the Professor of Oratory at least ten days before the day of public performance, and as often as the instructor may designate.

12. Athletics.—The above physical exercises only serve as a basis for many other forms of athletic exercises practiced and which are recommended and encouraged by the officers of the College. Under the auspices of the local organization, and a number of the College Athletic Associations of the state, all kinds of athletic sports are practiced and encouraged. The local representatives contest at the "State Meet" once a year for athletic as well other honors. Students should understand, however, that their studies must receive the first consideration; and that the purpose of athletic exercises is to develop gentlemanly and ladylike qualities in those who participate in them.

13. Student Organizations.—In the matter of student societies, the faculty allows the greatest freedom consistent with the general welfare. Those organizations which receive financial support from the student body and the general public are required to submit, at the close of the school year a detailed report to the proper committee from the faculty.

14. Literary Societies.—There are three literary societies composed entirely of college students. These societies meet

on every Saturday evening for literary exercises. A generous and fruitful rivalry for college honors exists among them, stimulating each to its best efforts. These societies are an important factor in the student's education and all are strongly advised to become members. All preparatory students are expected to become members of the Franklin society. The work of the society is carried on under the supervision of the head of the preparatory department and has a special function as preparation for college society work.

15. Christian Associations.—The young men's and young women's Christian associations of the College are voluntary organizations. The purpose of the local organizations is to promote growth in grace and Christian fellowship among their members. They seek to surround the students with an earnest spiritual atmosphere; to minister to their intellectual, moral and social well being; and to exert a voluntary Christian influence in the college which shall be strong and helpful. As members of the Christian inter-collegiate movement they receive all the benefits which accrue from such fellowship and from personal supervision of state and international college secretaries. Each association maintains prayer meetings and weekly devotional services.

16. Oratorical Association.—The purpose of this organization is to promote the art of public speaking among the students of the College. Each year it sends a representative, elected in a preliminary contest, to the inter-collegiate contest of the state. In order that this contestant may fully represent the College, the faculty has imposed the requirement that those competing for this honor must be pursuing regular work for the Bachelor's degree above that of the Freshman year.

17. Graduate Club.—The Graduate Club has been formed for the purpose of promoting good fellowship and broad scientific interest among the graduate students and resident graduates of the college. The club meets regularly on

the last Friday of each month during the school year. At these meetings papers are read, the object of which is to present in a comparatively untechnical form a brief outline of some topic of research, preferably touching recent advances in science.

18. Other Organizations.—Among other organizations may be mentioned the Athletic Association, which concerns itself with the athletic interests of the college; a debating club; and various other technical societies, each occupying its own sphere of influence.

19. Student Publications.—The "Industrial Collegian" is a sixteen page monthly magazine published by the students of the College. The "Collegian" aims not only to be an organ of the student body but a mirror of student life at this institution. The editorial staff is composed of an Editor-in-Chief, a Business Manager, and one member selected by each regularly organized literary society in the College. The Editor-in-Chief and Business Manager are selected at the close of each Winter term by the students who are at the time of such election bona-fide subscribers of the "Collegian."

20. College Work.—The instructional work of the institution divides itself naturally into two main classes, studies which lie at the foundation of the Agricultural processes, and those which bear more directly upon technological lines of work such as Mechanical, Steam and Electrical Engineering. The work of the College is moreover offered in such a way as to be best adapted to individual characteristics and needs and at the same time to secure for all a well rounded and symmetrical development.

21. General Conditions of Admission.—The candidate for admission to the College must be at least fourteen years old and of good moral character. Students applying for entrance to the Preparatory department must present evidence that they have completed the work of the public schools as far as the ninth grade; and no one is allowed to pursue the work of the

Sub-Freshman year or higher work until grades in the Preparatory course have been obtained. Before entering upon any college work, students must present satisfactory evidence that they have completed the prerequisites to that work.

22. Time of Entrance Examination.—The two days immediately before the opening of each term will be devoted to examining students applying for admission, both to the College and the Preparatory department.

23. Entrance Conditions.—A student may be admitted to the College without having passed in one or two of his entrance studies. These shall stand against him and must be cleared up within one year after entrance or the student will be required to take the subject with the regular classes.

24. Credits from Examinations.—Students will be allowed to take examinations in any subject offered without being regular members of the class pursuing that subject, if they have standings in all the prerequisites to that subject, provided that the head of the department concerned is convinced that the subject has been covered in a satisfactory manner; and having passed in the subject, students shall receive due credit therefor.

25. Admission from Other Institutions.—Students will be admitted to the College upon certificates from other reputable institutions, provided that these show that the students were honorably dismissed from those institutions, and have satisfactorily completed the work for which credit is asked. The College reserves the right, however, to cancel grades accepted from other schools should the student be found deficient in the subjects for which credit has been given.

26. Special Students.— Students of mature years who have passed in the work of the Preparatory department, may be allowed to pursue special studies if not candidates for a

degree, but they must satisfy the faculty that they are qualified to take up the studies desired.

27. Method of Registration.—The student should obtain a classification card in the registrar's office, upon which is written the names of the subjects to be pursued, according to the rules governing classification. The classification committee of the faculty will furnish all possible assistance in classifying students. New students must also fill out and file with the registrar cards giving desired information concerning themselves. Standings from the public schools or other educational institutions should also be filed with the registrar at this time. Upon receipt of the fees for the term, the secretary of the College stamps the classification card which is then to be presented to the different instructors under whom work is to be taken for their signatures, and in order that they may also enroll the student in their classes. This card should then be returned to the registrar. In no case should it be retained longer than three days after being issued. Students violating this requirement without sufficient excuse will be liable to the punishment of having their classification withdrawn.

28. Courses Defined.—A full recitation course is a five hour per week lecture or text book study for one term, and is designated as a small (a) course. A full laboratory course is a ten hour per week exercise for a whole term and is designated as a small (b) course. A course combining recitation and laboratory work is designated a small (a, b) course. No student will be permitted to take more than four and one-half nor less than three courses in any one term without special permission from the classification committee.

29. Grades.—All grades are reported to the registrar in figures on a scale of 100 as perfect. Grades are reported to students in classes as follows: Class "A" representing grades between 90 and 100. Class "B" from 80 to 90. Class "C" from 70 to 80. Classes "D" and "F" for all grades below 70. Stu-

dents having a term grade of "A" are not required to take final examination with their class. Grade "D" indicates that the student is conditioned, and may make up the work under a tutor, providing that this is done before the course is again offered. "F" indicates that the subject in question must be repeated with a regular class before a passing grade is obtained.

In determining the final grade ordinarily twice the recitation grade is added to the final examination grade and one-third of the sum is the "final grade." Large latitude is given the teacher, especially in the more advanced work, in the method of determining the student's "final grade."

30. Conditioned Students.—No student is allowed to register for advanced work who is conditioned in more than one course pursued in any one preceding term, neither will a student be permitted to register for advanced work at the beginning of any college year with more than one condition from previous work except when the student by permission changes his major and minor and satisfies the faculty that he is unable to remove conditions.

31. Attendance and Dismissal.—Students are expected to attend regularly all the exercises of the classes to which they are assigned from the date of their classification. When once classified they are required to be present from the beginning of each term thereafter, until regularly dismissed.

When a student finds it necessary to be absent he should get an excuse in advance, if possible. Otherwise it must be applied for at the earliest possible date after return to work. Excuses will be granted only when the absence seems necessary.

All omitted work must be made up within two weeks after return to College duties, unless the health of the student requires a longer period. Application for this extension should be made to the president when the student returns to work. This omitted work must be made up according to the direction

of the instructor and at times designated by him or the tutor in charge of the same. Should a student find it necessary to sever his connection with the institution before his work is completed at any time during the term, he should report to the president his reasons and secure an honorable dismissal; otherwise no standings will be entered in the records giving him credit for work done during the term.

32. Charge for Tutoring.—The charges which tutors are allowed for giving instruction are graded according to the nature of the work and the number of students taking work together, and for single periods, the maximum length of which is one hour, are shown by the following scheme:

Number of students	1	2	3	4	5	6 or more
Preparatory subjects	15c	25c	35c	40c	45c	50c
Sub-Freshman subjects ...	20c	30c	40c	45c	50c	55c
Fresh. and Soph. subjects.	25c	35c	45c	50c	55c	60c
Jun. and Senior subjects ..	30c	40c	50c	55c	60c	65c

In the absence of any instruction from the teacher as to the time a student should spend with a tutor in making up work, the tutor should see that the student covers the work which the teacher has assigned.

Students will be held responsible by the faculty for the payment of tutor fees. These must be paid to the respective heads of departments who will hand the same over to the tutors as soon as satisfactory reports concerning the work done have been received from the latter.

Should a student be absent from an appointment which has been made with a tutor, he shall be required to pay the same fee as if he had been present.

33. Degrees.—The College offers but two Baccalaureate degrees, Bachelor of Agriculture (B. Ag.) and Bachelor of Science (B. S.). For either degree the student must complete in a satisfactory manner the work of one of the schemes mentioned in 36. These include not less than forty-two courses above the Sub-Freshman year exclusive of military. The de-

gree of Master of Science may be conferred upon students who already hold the Baccalaureate degree, and who complete an additional amount of work equal to fourteen courses to be chosen from not more than two departments, in each of which credit for six collegiate courses has already been obtained, the advanced work to be done as prescribed by the faculty. Eight or more of these courses, constituting the "major," must be chosen from one department. At least one year of this work must be done while in residence.

34. Deportment.—Every student is allowed the fullest freedom of conscience and is supposed to have well grounded habits of politeness, industry, punctuality and integrity, but in order that the faculty may deal justly with any exceptional cases the following regulations are in force: After being absent from any class duties, the student must present to the instructor a statement from the executive office showing that he has been re-instated in the class. Upon entering the College and at the beginning of each term the student shall receive 100 deportment credits. Each unexcused absence shall be five discredits, and for any improper conduct noted and reported by any instructor the student shall be similarly punished in proportion to the offense. The number of credits a student has at the end of any term or at the time of severing his connection with the institution determines his grade in deportment the same as in study. Should the number fall below eighty the student will be considered upon probation and if of age will be notified of the fact, otherwise his parents or guardian. Should his credits fall below seventy the student will be suspended for the remainder of the term or during such time as the faculty may determine.

35. Special Courses.—The College also offers special courses in several important and practical lines of work. These

are mentioned in Part IV. in connection with the departments principally concerned and are as follows:

1. Two years' work in Pharmacy.
2. One year's work in Business Branches.
3. One year's work in Amanuensis branches.
4. One year's work in Steam Engineering.
5. One term's work in Dairy Science.
6. One term's work in Domestic Science.
7. Special work in Vocal and Instrumental Music.
8. Special work in Art.
9. Lectures on Animal Husbandry, six weeks.
10. Lectures on Farm Practice, six weeks.
11. Lectures on Horticulture, six weeks.
12. Lectures on Veterinary Medicine, six weeks.

36. SCHEMES OF STUDY.—The work leading to a Bachelor's degree may be done according to one of three general schemes, called groups "A", "B" and "C". Through these the work of the College is adapted not only to different classes of students, but to individual students themselves. The entrance requirements to each of these groups is the work of the Sub-Freshman year. (See Part Four.)

In each scheme, certain subjects, called required courses, must be taken by all students who follow that scheme; the remaining courses, called electives, can be selected by the students according to rules governing this choice.

Except in the cases of Group A with Agriculture as the major work, (see the schedule of subjects for the degree of Bachelor of Science in Agriculture, page 70) and Group C, which is designed for students of Pharmacy, nine elective courses are allowed, thus permitting the student to specialize during his last two years in college. In addition to these, the language work is largely elective, the student being allowed to choose between French, Latin or German, except in cases where his line of work makes one of them preferable to either of the others.

Before entering upon the duties of the Junior year, students should map out their work for the remaining two years,

in a manner satisfactory to the professors under whom elective work is to be taken. Heads of the departments and members of the classification committee will give all possible assistance towards helping the students make a proper selection of subjects.

37. ELECTIVES.—The nine electives of Groups A and B, must be chosen according to the following general rules:

No work ordinarily offered below the Sophomore year can be elected towards a degree. Where they deem it advisable, the faculty and heads of departments may impose special rules and restrictions governing the choice of electives. In no case shall the student be allowed to elect towards a degree more than three courses in industrial subjects such as cooking and shop work, or exercises of a similar character such as art and music; and these must be from the more advanced grades.

Five of the elective courses must be chosen along some one line of work, that in which the student wishes to specialize most, and shall constitute his "major." Three other courses must be chosen along some second line, and shall be called his "minor". One general elective is allowed, which is intended to permit the student to bring up his prerequisites, or in some other way to contribute to his general scholarship, and should be selected with reference to those ends.

"Majors" may be chosen in the following departments: Agriculture, Horticulture, Botany, Chemistry, Zoology and Veterinary Medicine, Pharmacy, English, History and Economics, Mathematics, Physics, Mechanical, Civil and Electrical Engineering, and Domestic Science.

"Minors" may be chosen in the same departments as majors and also in Foreign Languages, Art and Music.

General electives may be chosen from those courses which are offered as major and minor subjects.

For information concerning the electives of Group C. see 40.

38. GROUP A.—Those satisfactorily completing the work

of this group will receive the degree of Bachelor of Science. The required courses include those subjects which have a general application in the understanding of agricultural processes, thus affording the student the opportunity of laying the foundation for a broad scientific education. The work is as follows:

Agriculture, two and three-fifths courses: General, Agricultural Physics.

Botany, three courses: Elementary, Systematic, Physiological.

Chemistry, three courses: Inorganic, Organic.

Economics and Philosophy, three and one-fifth courses: Psychology, Economics, Ethics.

English, one and three-fifths courses: English Literature, Argumentation.

Geology, two courses: Elementary, Advanced.

History, three courses: General, American Institutions.

Horticulture, three-fifths course; Pomology.

Languages, six courses: Two years of either Latin, German or French.

Mathematics and Astronomy, three courses: Solid Geometry, Trigonometry, Surveying, Descriptive Astronomy.

Military Exercises: Drill, Lectures.

Zoology, three and three-fifths courses: Elementary Zoology, Advanced Physiology, Bacteriology, Advanced Zoology.

Entomology, one course.

Industrials, one and one-fifth courses: Electives, nine courses. Major, five; Minor, three: General, one.

NOTE—English Literature, General Physics, and History may be chosen by those who do not take their majors or minors in Agriculture or Horticulture, instead of General Agriculture, Agricultural Physics and Pomology. Male students must elect Agriculture, Horticulture, Shop-work, or some other industrial subjects approved by the Faculty during the Winter and Spring Terms of the Sophomore year, while female students are required to pursue the courses in foods during these two terms. The latter students must also take Sewing, Dairying and Household Economy instead of General Agriculture, Surveying, and Physiological Botany respectively, also Physical Culture in place of Military Exercises. For schedules of Groups see end of Part Three.

For students who wish to make Agriculture their major study, the required work of this group is slightly modified and the electives are specified. The courses of the Sub-Freshman year as designated in Part Four for this line of work are pre-

requisite to the Freshman year. The degree of Bachelor of Science in Agriculture (B. S. A.), will be conferred upon those who complete the work of this scheme, which is shown on page 70.

39. Group "B".—This group is intended not only for those students who wish to prepare themselves for pursuits which require only a general knowledge of mechanical and physical principles, but also for those who wish to fit themselves for technical work in Civil, Mechanical and Electrical Engineering. It requires less history and biology than Group "A", and only one year of foreign language, French, is required. However, those who do not elect work in Civil, Mechanical or Electrical Engineering can continue study along those lines in the Junior and Senior years. Students electing majors and minors in Physics and Mechanics should pursue work according to this scheme. Those who wish to specialize in Mathematics can also follow to advantage the required work of this group. Those who take their elective work in Engineering as outlined in the schedules will receive the degree of Bachelor of Science in Engineering studies. Those who choose their main elective work in other departments will receive the regular degree of Bachelor of Science.

Botany, one course: Elementary.
Chemistry, three courses: Qualitative, Inorganic, Organic.
Economics and Philosophy, two and four-fifths courses: Psychology, Sociology, Economics, Ethics.
English, two and one-fifth courses: English Literature, Argumentation.
French, three courses.
Geology, one course: Elementary.
History, two courses: General.
Mathematics, five and three-fifths courses: Solid Geometry, Trigonometry, Advanced Algebra, Analytic Geometry, Differential and Integral Calculus, Surveying.
Mechanics, three courses: Analytic Mechanics, Steam Engine, Strains in Framed Structures.
Mechanical Drawing, two courses.

Military: Drill, Lectures.

Physics, five courses: General, Advanced.

Shop work, two and three-fifths courses: Wood and Iron work.

Zoology, one and three fifths courses: Elementary, Advanced.

Astronomy, one course: Descriptive.

Electives, nine courses: Major, five; Minor, three; General, one.

NOTE.—Students who are taking special work in preparation for Electrical Engineering may elect Dynamo Electrical Machinery in place of Strains in Framed Structures. For schedule of work see end of Part Three.

40.—GROUP "C".—Students who satisfactorily complete the work of the first two years of this course will receive the degree of Pharmacy Graduate (Ph. G.). After the completion of the work of the next two years, the degree of Bachelor of Science will be conferred. This work in Pharmacy is offered nowhere else in the state and has received the hearty commendation of the State Board of Pharmacy. The subjects of this group offer excellent preparation for all the medical professions as well as for the teaching of science in high schools and colleges. Three elective courses are allowed and must be chosen from those subjects which are offered as major electives.

Botany, two courses: Elementary, Pharmacognosy.

Chemistry, four courses: Qualitative, Inorganic and Organic, Quantitative Analysis.

Economics and Philosophy, three and one-fifth courses: Psychology, Sociology, Economics, Ethics and Applied Psychology.

English, one and three-fifths courses: English Literature, Argumentation.

Geology, two courses: Elementary, Advanced.

History, three courses: General, American Institutions.

Languages, three courses: German or Latin.

Mathematics and Astronomy, two and three-fifth courses: Solid Geometry, Trigonometry, Descriptive Astronomy.

Military, Drill, Lectures.

Pharmacy, ten courses: Pharmacy Latin, Pharmacy, Materia Medica, Drug Assaying.

Physics, two courses: General.

Zoology, five courses: Elementary Zoology, Advanced Physiology, Anatomical Methods, Bacteriology.
Entomology, one course.
Electives, three courses.

41. SCHEDULES OF THE GROUPS.—On the next few pages the schedules of the work of the different groups leading to the Bachelor degrees are given. The subjects printed in ordinary type are the required courses, while the electives are in italic face. The notation immediately after the name of a subject indicates its nature and the number of times it occurs a week, "a" referring to the class work, and "b" to laboratory exercises. For requirements in military exercises and physical culture see Part Four. The student must understand that these schemes are models only, in which the elective work is taken from the most important departments. Those wishing to elect other subjects than those indicated in the schemes must choose them according to the rules governing the choice of electives, (See 37).

All male students, excepting those classified in special short courses, not exceeding one term's length, will be required to take military, sufficient to meet the requirements of the War Department.

AGRICULTURE, GROUP A.

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorganic Chemis., a & b 5	Inorganic Chem... a & b 5	Systematic Botany a & b 5
	9:30	Stock Judging a 5	Trigonometry a 5	Entomology a 2, b 3 Breeds of Live Stock a 3
	10:30	Elemen. Zoology..a 4, b 1	Bacteriology..... a 2, b 3	Organic Chemistry a 4, b 1
	1:15	Elemen. Botany..a 3, b 2	Horse Shoeing.....a 1, b 2	Surveying b 2
	3:15	Military	Military	Military
SOPH.	8:30	Agricultural Physics a3, b2	General History a 5	Advanced Physiology.. a 5
	9:30	Ger., French or Latin..a 5	Ger., French or Latin.. a 5	Ger., French or Latin.. a 5
	10:30	Elementary Geology...a 5	Agricultural Physics a3, b2	Stock Breeding a 3
	2:15	Physiolo. Botany..a 2, b 3	Theory of Horticulture. a 3	Advanced Dairying.. b 2 Forestry a 3
	3:15	Military	Military	Military
JUNIOR.	8:30	Pomology a 3	Veterinary Medicine... a 5	
	9:30	Veterinary Medicine.. a 5	Advanced Geology a 5	Veterinary Medicine... a 5
	10:30	Ger., French or Latin. a 5	Ger., French or Latin.. a 5	Ger., French or Latin.. a 5
	1:15	Quantitative Chemis.. b 5	Chemistry of Foods a & b 5	Agr. Chemistry.... a & b 5
	3:15	Argumentation a 3	Argumentation a 1	Psychology a 3 Argumentation a 1
SENIOR	8:30	Seeds and Grasses.a 2, b 3	Original Investigation .b 5	Landscape Gardening.. a 2
	9:30	Evo. Cultivated Plants a 2	General Agriculture... a 3	
	10:30	Astronomy a 5	Race Development.....a 5	Ethics and Ap. Psychol a 5
	1:15	Soil Fertility a 3	Stock Feeding a 2 Agr. Experimentation b 3	Stock Feeding b 3
	3:15	Sociology a 3 Military Lectures....a 1		Original Investigation and Thesis b 5

SCIENTIFIC HORTICULTURE, GROUP A.

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorganic Chem...a & b 5	Inorganic Chem... a & b 5	Systematic Botany a & b 5
	9:30	Geometry a 3	Trigonometry a 5	∫ Entomology..... a 3, b 2
				⌊ Breeds of Live Stock. a 3
	10:30	Elemen. Zoology..a 4, b 1	∫ Bacteriology.... a 2, b 3	
			⌊ English Literature...a 3	Organic Chemistry. a 4, b 1
	1:15	Elemen. Botany..a 3, b 2		Surveying b 2
	3:15	Military	Military	Military
SOPH.	8:30	Agricultural Physics a3, b2	General History a 5	Advanced Physiology.. a 5
	9:30	Ger., French or Latin..a 5	Ger., French or Latin.. a 5	Ger., French or Latin a 5
	10:30	Elementary Geology...a 5	Agricultural Physics a3, b2	General History a 5
	1:15			Forestry a 3
	2:15	Physiolo. Botany..a 2, b 3	Theory of Horticulture. a 3	
	3:15	Military	Military	Military
JUNIOR.	8:30	Pomology a 3	Advanced Geology a 5	
	9:30	Veterinary Medicine.. a 5	Ger., French or Latin.. a 5	American Institutions. a 5
	10:30	Ger., French or Latin. a 5		Ger., French or Latin a 5
	1:15		*Chemistry of Foods* a & b 5	*Agr. Chemistry* a & b 5
	2:15	*Quantitative Chem*....b 5	∫ Advanced Zoology... a 3	
	3:15	Argumentation a 3	⌊ Argumentation a 1	∫ Psychology a 3
				⌊ Argumentation a 1
SENIOR.	8:30	*Seeds and Grasses*.a 3, b 2	*Original Investigation*. b 5	*Landscape Gardening*.. a 2
	9:30	∫ *Evolu. of Cult. Plants* a 2		
		⌊ *Soil Fertility* a 3	Gen. Agriculture..... a 3	
	10:30	Astronomy a 5	Race Development.....a 5	Ethics and Ap. Psycho. a 5
	1:15			*Stock Breeding* a 2
	3:15	∫ Sociology a 3		
		⌊ Military Lectures....a 1	*Hort. Experimentation*. b 5	*Original Investigation*. b 5

DOMESTIC SCIENCE, GROUP A.

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorganic Chem...a & b 5	Inorganic Chem... a & b 5	Systematic Botany a & b 5
	9:30	Geometry a 3	Trigonometry a 5	English a 3
	10:30	Elemen. Zoology..a 4, b 1	Bacteriology... a 3, b 2 English a 3	Organic Chemistry. a 4, b 1
	1:15	Elemen. Botany..a 3, b 2		Sewing b 3 Domestic Dairying.. b 2
	3:15	Physical Culture 2	Physical Culture 2	Physical Culture 2
SOPH.	8:30	General Physics. a 3, b 2	General History a 5	Advanced Physiology.. a 5
	9:30	Ger., French or Latin..a 5	Ger., French or Latin.. a 5	Ger., French or Latin a 5
	10:30	Elementary Geology...a 5	General Physics.. a 3, b 2	General History a 5
	1:15		Foods a 3	Foods a 3
	2:15	Household Economy...a 5		
	3:15	Physical Culture 2	Physical Culture.....2	Physical Culture 2
JUNIOR.	8:30	English History a 5	*Cooking* b 3	*Cooking* b 3
	9:30	*Home Nur. & Inv. Cook.*a 5	Advanced Geology a 5	American Institutions. a 5
	10:30	Ger., French or Latin. a 5	Ger., French or Latin.. a 5	Ger., French or Latin.. a 5
	1:15	*Cooking* b 3		
	2:15			
	3:15	Argumentation a 3	Advanced Zoology... a 3 Argumentation a 1	Psychology a 3 Argumentation a 1
SENIOR.	8:30	*General Hygene* a 5	*Dietary Studies* a 5	*Fabrics* a 5
	9:30			
	10:30	Astronomy a 5	Race Development.....a 5	Ethics and Ap. Psycho. a 5
	1:15	*Quantitative Chem.*... b 5	*Chemistry of Foods* a & b 5	*Household Sanitation.* a 5
	3:15	Sociology a 3		

MECHANICAL ENGINEERING, GROUP B.

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Organic Chem....a & b 5	Inorganic Chem... a & b 5	Algebra a 5
	9:30	Geometry a 3	Trigonometry a 5	English a 3
	10:30	Elemen. Zoology..a 4, b 1	English Literature.... a 3	Organic Chem.....a 4, b 1
	1:15	Elemen. Botany..a 3, b 2	Mechanical Drawing... b 5	{ Surveying b 2 { Forging b 3
	3:15	Military	Military	Military
SOPH.	8:30	General Physics.. a 3, b 2	Analytic Geometry a 5	General Physics.. a 4, b 1
	9:30	French a 5	French a 5	French a 5
	10:30	Elementary Geology.. a 5	General Physics.. a 3, b 2	Calculus a 5
	1:15	Shopwork b 3	Shopwork b 3	Shopwork b 3
	3:15	Military	Military	Military
JUNIOR.	8:30	Calculus a 3	General History..... a 5	Steam Engine a 5
	9:30	*Elements of Mechanism* a 5	Advanced Physics. a 3, b 2	*Advanced Physics* a 3, b 2
	10:30	Advanced Physics a 3, b 2	*Analytic Mechanics*.... a 5	General History..... a 5
	1:15	Shopwork b 5		
	3:15	Argumentation a 3	{ Advanced Zoology... a 3 { Argumentation a 1	{ Psychology a 3 { Argumentation a 1
SENIOR.	8:30	*Steam Boilers* a 5	Strains in Fr. Struct.. a 5	
	9:30		*Dynamo Elec. Mach.* a 3, b 2	*Dynamo Elec. Mach.* a 3, b 2
	10:30	Astronomy a 5	Race Development.....a 5	Ethics and Ap. Phycho. a 5
	1:15	*Kinematics* b 5	*Engineering Design*.... b 5	*Engineering Design*.... b 5
	3:15	{ Sociology a 3 { Military Lectures....a 1		

ELECTRICAL ENGINEERING, GROUP B.

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorganic Chem...a & b 5	Inorganic Chem... a & b 5	Algebra a 5
	9:30	Geometry a 3	Trigonometry a 5	English a 3
	10:30	Elemen. Zoology..a 4, b 1	English Literature.... a 3	Organic Chemistry. a 4, b 1
	1:15	Elemen. Botany..a 3, b 2	Mechanical Drawing... b 5	{ Surveying b 2 { Forging b 3
	3:15	Military	Military	Military
SOPH.	8:30	General Physics. a 3, b 2	Analytic Geometry a 5	General Physics.. a 4, b 1
	9:30	French a 5	French a 5	French a 5
	10:30	Elementary Geology...a 5	General Physics.. a 3, b 2	Calculus a 5
	1:15	Shopwork b 3	Shopwork b 3	Shopwork b 3
	3:15	Military	Military	Military
JUNIOR.	8:30	Calculus a 3	General History..... a 5	Steam Engine a 5
	9:30	*Elements of Mechanism* a 5		*Dynamo Elec. Mach.* a 3, b 2
	10:30	Advanced Physics a 3, b 2	Dynamo Elect. Mach a3, b 2	General History..... a 5
	1:15	Elect'y & Magnet'm a3, b 2	*Analytic Mechanics*.... a 5	
	3:15	Argumentation a 3	{ Argumentation a 1 { Advanced Zoology... a 3	{ Argumentation a 1 { Psychology a 3
SENIOR.	8:30	*Steam Boilers* a 5	*Elec. Lt. & Power Dis.*a3, b2	*Designs of Pow. Sta.* a3, b2
	9:30	*Alternating Currents* a3, b2		
	10:30	Astronomy a 5	Race Development.....a 5	Ethics & Ap. Psycho... a 5
	1:15	*Shopwork or Drawing*. b 2	*Shopwork or Drawing*.. b 5	*Shopwork or Drawing*.. b 5
	3:15	{ Sociology a 3 { Military Lectures....a 1		

AGRICULTURAL ENGINEERING, GROUP B.

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorganic Chem...a & b 5	Inorganic Chem... a & b 5	Algebra a 5
	9:30	Geometry.....a 3	Trigonometry a 5	English a 3
	10:30	Elemen. Zoology..a 4, b 1	English Literature.... a 3	Organic Chemistry. a 4, b 1
	1:15	Elemen. Botany..a 3, b 2	Mechanical Drawing... b 5	Forging b 3
	3:15	Military	Military	Surveying b 2
				Military
SOPH.	8:30	{ General Physics. a 3, b 2		
		{ Spherical Trigo..... a 2	Analytic Geometry a 5	General Physics.. a 4, b 1
	9:30	French a 5	French a 5	French a 5
	10:30	Elementary Geology...a 5	General Physics.. a 3, b 2	Calculus a 5
	1:15	Surveying b 3	The. & Prac. of Sur.... a 3	Plotting b 3
	3:15	Military	Military	Military
JUNIOR.	8:30	Calculus a 3	General History..... a 5	General History..... a 5
	9:30	*Irriga. Engineering*.. a 5	*Advanced Geology*..... a 5	*Hydraulics*..... a 3, b 2
	10:30	French a 5	French a 5	French a 5
	1:15	Topographical Draw...b 2	Analytic Mechanics... a 5	
	3:15	Argumentation a 3	Argumentation a 1	{ Argumentation a 1 { Psychology a 3
SENIOR.	8:30		Strains in Fr. Struct.. a 5	*Reservoirs & Dams* a 3
	9:30	*Road Construction* a 5	*Practical Astronomy*... a 3	*Bridge Construction* a3, b 2
	10:30	Astronomy a 5	Race Development.....a 5	Ethics & Ap. Psycholo. a 5
	1:15	*Irrigation Experiments*.a 3	*Sewerage Engineering* .a 5	*Mcteorology* a 2
	3:15	{ Sociology a 3		
		{ Military Lectures....a 1		

PHARMACY, GROUP C.

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorganic Chem...a & b 5	Inorganic Chem... a & b 5	Advanced Physiology.. a 5
	9:30	Anatomical Methods.. a 3	Anatomical Methods a3, b 2	Pharmacognosy..... a 3
	10:30	Pharmacy Latin..... a 5	Bacteriology a 2	Organic Chemistry. a 4, b 1
	1:15	{ Elementary Bot. a 3, b 2		
		{ Anatomical Methods b 2	Bacteriology b 3	Pharmacognosy..... b 2
	3:15	Military	Military	Military
SOPH.	8:30	Pharmacy a 5	Materia Medica a 5	
	9:30	Materia Medica a 5	Pharmacy a 5	Materia Medica a 5
	10:30	Zoology a 5	English Literature.... a 3	Pharmacy a 5
	1:15	Quantitative Analysis. b 5	Pharmacy b 5	{ Pharmacy b 5
				{ Drug Assaying..... b 5
	3:15	Military	Military	Military
JUNIOR.	8:30	General Physics.. a 3, b 2	General History a 5	Elective a 5
	9:30	Geometry a 3	Trigonometry a 5	{ Entomology or
				{ Systematic Botany a3, b2
	10:30	Elementary Geology... a 5	General Physics.. a 3, b 2	General History..... a 5
	3:15	Argumentation a 3	Argumentation a 1	{ Psychology a 3
				{ Argumentation a 1
SENIOR.	8:30	Elective a 5	Elective a 5	
	9:30		Advanced Geology a 5	American Institutions. a 5
	10:30	Astronomy a 5	Race Development.....a 5	Ethics & Ap. Psycholo. a 5
	1:15	German or Latin a 5		
	2:15		German or Latin a 5	German or Latin a 5
	3:15	{ Sociology a 3		
		{ Military Lectures .. a 1		

PART FOUR.

DEPARTMENTS AND WORK.

THE AGRICULTURAL EXPERIMENT STATION.
(Ex.)

PROF. WILSON, DIRECTOR.

The Experiment Station under the provisions of the Hatch Act receives $15,000 annually from the federal government for its support. Its function is to conduct investigations along agricultural lines; publish the results in bulletin form and distribute them to the farmers of the state for their information and benefit.

It consists of six divisions, namely, Agriculture, Horticulture, Chemistry, Botany and Entomology, Animal Husbandry and Veterinary. These divisions are in charge of experts in these lines and who are also at the head of the above mentioned departments in the College.

Their work is as follows: The adaptation and dissemination of new grains, grasses and forage plants; the rotation of crops; the improvement and origination of new varieties of trees, plants and shrubs; the improvement of grains by crossing and selecting; the determination of the composition of the new varieties of grains that are produced or are received from time to time through co-operation with the Department of Agriculture at Washington; the feeding of domestic animals under different conditions, and the study of the various diseases affecting them.

At least four bulletins are published on these various subjects annually and are mailed to about nine thousand readers. They are free to the residents of the state.

*As in Part Three, the letters "a" and "b" are used to designate recitation and laboratory work respectively in the description of the various courses of study.

DEPARTMENT OF AGRICULTURE.
(Ag.)

PROFESSOR WILSON, MR. SKINNER AND MR. STONER.

This department includes the farm, dairy and animal husbandry divisions. New grains and forage crops are grown under field conditions and are used in feeding experiments for the economical production of beef, mutton, pork and dairy products. An effort is made to familiarize all students who matriculate in the agricultural courses with the best methods in each line. The latest and most improved kinds of farm machinery are used on the farm, and the student has an opportunity to become entirely familiar with their operation.

In the dairy the student is taught the best methods of making high grade butter and fancy cheese. Representative herds of dairy cattle are kept for the purpose of furnishing milk for the college creamery and to furnish facilities for students to make comparisons as to breeds and their different characteristics.

The College flocks and herds contain representatives of the leading breeds of horses, cattle, sheep and swine, the same being used for educational and experimental purposes. Practical work is given in score-card practice to better enable the student to distinguish good individuals from poor ones, and the fancy from the good, an acquirement which is essential in show-yard work as well as in every day life of the farmer and stock-raiser. In this, as in all other divisions of this department, the object is to give the student practical as well as theoretical training.

The following work is offered:

1 F.—Elements of Dairying, b3, 1:15.
b, A study of the composition of milk, the operation of the different separators and the testing of milk, etc.
American Dairying, by H. B. Gurlor.
Testing Milk and its Products, by Farrington and Woll.
2 W.—Dairying, b 2, 1:15.
a, Continuation of the Fall term's work.
3 S.—Breeds of Live Stock, a 3, 9:30. Prof. Wilson.
a, This will consist of the studying of the various breeds, their origination, characteristics, improvements, adaptability to different climates and the best kinds for special purposes.
Curtis' Horses, Cattle, Sheep and Swine.
4 S.—Cheese-making, b 3, 1:15.
b, Includes the making of cheese under ordinary farm and factory conditions.
Lectures and Laboratories.
5 F.—Stock Judging, a 5, 9:30: Prof. Wilson and Mr. Skinner.
a, The score-card will be used in connection with Mr. Craig's Live Stock Judging.
6 W.—General Agriculture, a 3, 9:30.
a, Lectures by Profs. Wilson and Chilcott.
7 S.—Stock Breeding, a 2, 10:30. Prof. Wilson and Mr. Skinner.
a, Lectures and references to original research on the laws of reproduction as influenced by variation, selection and heredity. The effect of crossing different breeds, inbreeding, and so forth.
Miles' Stock Breeding and References.
8 S.—Advanced Dairying, b 3, 2:15.
b, Instruction in the making of fancy cheese, such as the Edam, Gouda, Brick and others.
Lectures and Laboratories.
9 F.—Competitive Live Stock Judging, b 2, 8:30, Prof. Wilson and Mr. Skinner.
Pre. 3 and 5.
b, This is an exercise for the purpose of fiitting young men to become expert judges of stock for different purposes, to train the eye to that high degree of excellence which is necessary for one who deals in stock. But before this work is pursued the student should have taken the Breeds of Live Stock and Live Stock Judging.

10 W.—Stock Feeding, a 2, 1:15. Prof. Wilson and Mr. Skinner.
a. Laws of nutrition, expenditure of energy under labor and at rest, composition of the different food stuffs and their effect on the animal when taken into its stomach, balanced rations, finishing for market and the economical handling of stock under conditions in South Dakota.
W. A. Henry's Feeds and Feeding, and the result of scientific investigation.
11 S.—Stock Feeding, a 3, 1:15. Prof. Wilson and Mr. Skinner.
a, Continuation of the Winter Term.
12 F.—Original Investigation, b 5, 8:30. Profs. Wilson, Chilcott, Saunders, Hansen, Shepard and Dr. Moore.
b, The student is required to select a subject for a thesis along some agricultural line and to complete two terms in original investigation.

SPECIAL SIX WEEKS' COURSE IN AGRICULTURE.

(From Jan. 4 to Feb. 13, 1904.)

This course is offered to accommodate those, young and old, who cannot avail themselves of the opportunities offered in the long courses. It will cover a period of six weeks and there will be no entrance examination required. The work will consist of lectures, recitations, demonstrations and practical laboratory exercises in the following subjects: Stock judging, farm methods and implements, crop rotation, corn judging, seed selection and breeding, diseases of domestic animals and their treatment, insects injurious to farm crops and the elements of horticulture, including the cultivation and propagation of vegetables, fruits, trees and shrubs.

THE SPECIAL BUTTER-MAKERS' COURSE.

(From Jan. 4, to March 25, 1904.)

This course is designed to fit young men for creamery operators and managers.

The work embraces the care of dairy cows, stables, milk and dairy utensils; the ripening of cream, pasteurization and sterilization of milk. The discussion and practice of ripening cream with pure and natural culture together with all the latest practical methods of successfully operating a creamery.

The following work is offered:

General Agriculture and Care of Dairy Cows, a 5..... 8:30
Dairy Lectures, a 5 9:30
Dairy Arithmetic, a 3 10:30
Dairy Engineering, a 2 10:30
Lectures in Botany, Entomology, Horticulture and Zoology, a 3, optional 3:15
Book-keeping, a 3 1:15
Practical Butter-making, b 5..... 2:15
Bacteriology, a2

On successfully completing the term's work offered, the student is entitled to a certificate of efficiency as helper in a creamery and upon completing a full season's work as helper satisfactorily to the butter-maker and manager, with their recommendation, he may receive a certificate of competency to operate a creamery.

COURSE IN DOMESTIC DAIRYING.

(From Sept. 23, to Dec. 16, 1903.)

This course is offered to the class in Domestic Science and to special students (young men and women) who desire to become proficient in the art of home dairying, how to make butter and cheese on the farm or in private dairies, the care and management of the same, etc. Completion of this work entitles the student to a certificate of competency to manage a dairy farm or private dairy. The following work in the various courses is offered:

Care and management of dairy cows, a 5.
Testing dairy products, a 2, b 3.
Practical laboratory work in butter and cheese-making, as applied to home and farm dairying, b 5.

Care and management of hand separators and other modern dairy apparatus, b 5.
Dairy bacteriology, a 2, b 3.

SPECIAL CHEESE-MAKERS' COURSE.

(Special Work in Dairy Science, March 28, to June 16, 1904.)

The development of dairy interests throughout the state has been very rapid during the past few years, calling for a large number of technical and experienced operators of factories, especially expert butter-makers and men who are competent to advise and direct dairy farmers in the care and management of dairy herds, care and management of milk, etc. Recently there has developed a desire on the part of the dairy farmer in some localities to engage in the manufacture of cheese. A SPECIAL CHEESE-MAKING COURSE IS OFFERED, embracing the manufacture of Young America's, Edam, Gouda, Brick and other styles of fancy cheese and the regular American Chedder factory and flatts.

The following work is offered:

Dairy Lectures, a 5..... 9:30
Dairy Arithmetic, a 3.....10:30
Dairy Engineering, a 2.....10:30
Book-keeping, a 3 1:15
Practical Cheese-making, b 5..... 2:15
Dairy Bacteriology, a 2 10:30

On completion of the work the student will receive a certificate of proficiency as assistant or helper in a cheese factory under a competent and practical cheese-maker, but after obtaining a position as such, the student will be required to report to the dairy-instructor every month. Upon completing a full season's work as helper satisfactorily to the cheese-maker and manager, with their recommendation he may receive a certificate of efficiency to operate a cheese factory.

HOME READING COURSE.

The College aims to reach and interest farmers in their homes. It offers instruction by correspondence to those who will read such books as are recommended and send to the College written answers to questions sent out. Five distinct courses are offered in this way and it is certainly a rare opportunity for self improvement. Those who desire a circular giving these courses and the method of procedure should write to the President of the College for the same.

DEPARTMENT OF GEOLOGY, AGRONOMY AND AGRICULTURAL PHYSICS.

(Gl.)

PROFESSOR CHILCOTT, MR. HOLM AND MR. COLE.

In offering the work of this department two objects are sought. First to give all candidates for degrees a thorough understanding of the foundation principles of the subject of geology and their intimate relations to the various activities of life. Second, to afford an opportunity for students desiring a general agricultural education, and those wishing to become specialists along any line of agriculture, to make a thorough study of the soil and its relation to plant growth; and to teach them how to apply the general laws of physics to ordinary farm operations, the planning and construction of buildings, the handling of crops and machinery, and weather forecasting.

The prerequisites to the work offered in this department are that the student shall have completed all the required work in some one of the regular courses for the Freshman year, or shall have passed satisfactory examinations in these subjects.

Especial effort is made in courses 1 and 4 to train students in habits of close observation of the various natural phenomena continually in progress in the evolution of land forms and the development of animal and plant life, and to acquaint them with the geological history, climatic conditions, and natural

resources of the state, as well as to give a general knowledge of geology.

The geological class room and the museum are well supplied with rock specimens, fossils, casts, maps, globes, and charts. A good stereopticon and a large number of slides are used for demonstration.

A well equipped laboratory is provided for the work in Agricultural Physics.

Course 1 is required of all candidates for the Bachelor degrees; Course 4, of all except those taking the Engineering courses.

All of the work offered is required in the Agricultural course. Students taking other courses may select any of the work offered provided they have had the prerequisites.

The following courses are offered:

1 F.—Elementary Geology, a 5, 10:30. Prof. Chilcott.
Pre. All required work below the Sophomore year.
a, Introduction to dynamic, structural, physiographical, and historical geology. Lectures illustrated by the stereopticon.
Scott's Introduction. Mineral and rock specimens, charts, maps and diagrams.

2 F.—Agricultural Physics { a 3, 8:30 } Prof. Chilcott.
{ b 2, 8:30 } Mr. Holm.
Pre. 1.—
a, Physical properties of the soil, supply of food to the growing plant, soil moisture, soil temperature, tillage, nitrification, wells, irrigation.
b, Mechanical analysis of soils; organic matter, moisture, and specific gravity determinations; capillarity and water holding capacity of various soils; measure of the flow of water and the passage of air through different soils; the effect of mulching and tillage upon the conservation of moisture.
Physics of Agriculture, King; lectures, references, notebook.

3 W.—Agricultural Physics { a 3, 10:30 } Prof. Chilcott.
{ b 2, 10:30 } Mr. Cole.
Pre. 2.—

a, Rural architecture, barns, stables, silos; farm mechanics, principles of draft, roads; farm motors, horse power, engines, windmills; farm machinery, friction, pumps; the atmosphere, winds, storms, forecasting.
b, Laboratory work with models and apparatus for measuring draft, examination and tests of farm machinery and implements.
Physics of Agriculture, King; lectures, note-books.

4 W.—Geology, a 5, 9:30. Prof. Chilcott.
Pre. 1.—
a, The history of the evolution of the earth and its inhabitants.
Le Conte's Elements of Geology, lectures, charts, diagrams, maps, notes.

5 F.—Soil Fertility, a 3, 1:15. Prof. Chilcott.
Pre. 2.—
a, A study of manures and manuring. Nitrification, leguminous crops for green manuring. Conservation of fertility by rotation of crops. Economic sources of the elements of fertility.
Aikman's Manures and Manuring.

6 W.—Agricultural Experimentation, b 3, 1:15-3:15. Prof. Chilcott.
Pre. 1, 2, 3 and 4.—
b, A general study of experimental work as pursued by the experimental stations of this country, study of the bulletins and reports of the various stations and a comparison of their methods and results.
Experiment Station Record. U. S. Department of Agriculture and Experiment Station publications.

DEPARTMENT OF HORTICULTURE AND FORESTRY.

(Ho.)

PROFESSOR HANSEN; MR. THORNBER.

In the regular College work these subjects are taught as an applied science as well as an art, full use being made of the students' attainments in the various sciences underlying the practice of Horticulture. The variation of cultivated plants, and the principles and methods of their development under the

hand of man, are considered, as well as their propagation and cultivation.

Field and laboratory exercises emphasize the lessons taught in the class room. Ample facilities for practical illustration are offered by the eighty acres of experiment station horticultural grounds and College campus, including the orchards, forestry plantations, arboretum, nursery, vegetable gardens, small fruit plantations, flower borders and ornamental grounds. The horticultural buildings contain class rooms, laboratory, conservatory and forcing house; grafting and potting rooms and storage cellars.

Students desiring to make Horticulture their major subject should elect courses 2-8 inclusive. One full course of Entomology may be substituted for either 7 or 8. Those taking a minor should elect courses 2-6 inclusive.

The commercial nursery course is intended as a short winter course for those desiring to engage in the business of growing trees and plants for sale, especially trees adapted to prairie conditions. Special stress is laid upon practical work in the grafting room. No examination is required for entrance to this short course.

The following work is offered:

1 F.—Elements of Horticulture { a 2, 2:15-3:15 } Prof. Hansen. { b 1, 1:15-3:15 } Mr. Thornber.

Required of all students.

a, Propagation and management of fruit and ornamental trees and plants with special reference to prairie conditions; cultivation of vegetables, greenhouse management; market and home gardening. A view is taken of the entire field of Horticulture and its various divisions as a life work.

b, Special attention is given by the young men to work in grafting and to general field and greenhouse work, and by the young women to exercises in floriculture and home gardening.

Lectures. American Horticultural Manual.

2 F.—Pomology and Olericulture, a 5, 8:30-9:30. Prof. Hansen. Pre 1.

a, The history, management and propagation of fruits and vegetables. Exercises in the technical description of fruits. Lectures, Bailey's Principles of Fruit Culture and Vegetable Gardening. Green's Vegetable Gardening.

3 W.—Theory of Horticulture, a 3, 1:15-2:15. Prof. Hansen. Pre. 1-2.
a, The theory of gardening operations. The relationship and physiology of plants from an horticultural standpoint.
Lectures. Text book references.

4 F.—Evolution of Cultivated Plants, a 2, 10:30-11:30, Prof. Hansen. Pre. 1-3.
a, The variation of plants under the hand of man. The modification and amelioration of plants by cultivation, soil, climate, selection and hybridization.
Lectures, Bailey's Plant Breeding and Survival of the Unlike.

5 S.—Forestry, a 3, 1:15-2:15. Prof. Hansen.
Pre. 1-4.
a, Principles of forestry, the influence of forest on climate, timber planting on the prairies, European forestry methods as modified by prairie conditions, shelter belts, the propagation, cultivation, characteristics and uses of forest trees.
Lectures, Pinchot's Primer of Forestry, Green's Forestry in Minnesota.

6 S.—Landscape Gardening, a 2, 8:30-9:30. Prof. Hansen.
Pre. 1-5.
a, The beautiful in nature, gardening as one of the fine arts, historical development of the ancient or geometric, and the modern or natural styles, best ornamental trees, shrubs and plants, hedges, lawn-making, walks and drives.
Lectures. Text book references.

7 F., W. or S.—Horticultural Investigation, b 5, 1:15-3:15. Prof. Hansen. Pre. 1-6.
b, Investigation along some special line.

8 W.—German Horticultural Literature, a 5, 9:30-10:30. Prof. Hansen.
Pre. 1-6 and the first four terms of German.
a, The reading of technical German works on Horticulture.

SHORT COURSES IN HORTICULTURE.

(From Jan. 4, to March 25, 1904.)

Special Commercial Nursery Course. Lectures and Practical work in commercial propagation and nursery management of fruit trees and small fruits, forest trees, ornamental trees, shrubs and plants, grafting, budding, pruning, cutting scions, packing grafts, making cuttings and stratifying seeds. All of every day.

Lectures: American Horticultural Manual, Bailey's Nursery Book, Goff's Principles of Plant Culture, Green's Amateur Fruit Growing and Forestry in Minnesota.

DEPARTMENT OF BOTANY.

(Bt.)

PROFESSOR SAUNDERS; MR. THORNBER.

The work in Botany is arranged to give the student a thorough knowledge of plant life. The Botany department occupies the second floor of the new "Plant Breeding Building." It is provided with all the apparatus necessary for biological work, including microtome, microscopes and physiological apparatus.

1 F.—Elementary Botany, { a 3, 1:15-2:15 } Prof. Saunders. { b 2, 1:15-3:15 } Mr. Thornber.

Required in groups "A", "B" and "C".

a, A general introduction to Botany, the structure and function of protoplasm, a brief study of some of the principles of plant economy and the life history of some important groups of microscopic plants, introduction to the structure of the flowering plants.

b, Demonstration of (a).

Bergen's Foundations of Botany, with lectures.

2 Systematic Botany, { a 2, 8:30-9:30 } Prof. Saunders. { b 3, 8:00-9:30 } Mr. Thornber.

Pre. 1. Required in group "A".

a, The relationship of ferns and flowering plants.

b, The collecting, analyzing, naming and mounting of an herbarium of one hundred plants.

Gray's Lessons and Manual of Botany.

3 F.—Physiological Botany, { a 2, 2:15-3:15 / b 3, 2:15-4:15 } Prof. Saunders.
Pre. 1 and 2; Ph. 1, 2 and 3; Ch. 1 and 2. Required of the young men in group "A".
a, The manufacture of the various food substances from inorganic matter, metabolism, absorption of gases, irritability and growth.
b, Demonstrations of (a).
McDougal's Practical Plant Physiology. Lectures and references.

4 S.—Pharmacognosy, { a 3, 9:30-10:30 / b 2, 1:15- 3:15 } Prof. Saunders.
Pre. 1. Required in group "C".
a, Families of medicinal plants, the histology of the important drugs, study of the glands, reservoirs or receptacles of the essential parts of the drugs.
b, Demonstration of (a).
Sayer's Organic Materia Medica and Pharmacognosy.

5 F.—Embr'y & Phytopal'ogy, { a 2, 2:15-3:15 / b 3, 1:15-3:15 } Prof. Saunders. Pre. 1, 2 and 3.
a, A study of the history of some plant. Lectures in fossil botany.
b, Demonstration of (a).

6 W.—Mycology, { a 3, 2:15-3:15 / b 2, 1:15-3:15 } Prof. Saunders.
Pre. 1, 2 and 3.
a, Structure and reproduction of the more important fungi; especial attention will be given to those that are destructive to economic plants.
b, Demonstration of (a).

7 S.—Entomology, { a 2, 1:15-2:15 / b 3, 1:15-3:15 } Prof. Saunders.
Pre. 1 and 2; Zo. 1 and 2.
a, Study of the life history of several type insects, means employed in combatting insects destructive to economic plants.
b, Demonstrations of (a).
Hyatt & Arms' Insecta.

8 F.—Ferns & Flowering Plants { a 2, 10:30-11:30 / b 3, 1:15- 3:15 } Prof. Saunders. Pre. 1 and 2.

a, Histology and Physiology. A study of the minute tissues of the higher plants.
b, The solving of physiological problems by experimentation.
References and Lectures.

9 W.—Cryptogmaic Botany, { a 2, 8:30-9:30 / b 3, 1:15-3:15 } Prof. Saunders.
Pre. 1 and 2.
a, Structure and life history of type specimens of the lower plants from the bacteria to the ferns, a study of the fungi destructive to farm and garden crops.
b, Laboratory work covering topics in (a).
References and Lectures.

10 S.—Sys. Bot. & Ecology, { a 3, 1:15-2:15 / b 2, 1:15-3:15 } Prof. Saunders.
Pre. 1, 2 and 3.
a, The principal families of flowering plants, their distribution and relationship, lectures on relation of the plant to its environment.
b, Demonstrations of (a).

11 F.—Seeds and Grasses, { a 3, 8:30-9:30 / b 2, 8:30-9:30 } Prof. Saunders.
Pre. 1 and 2.
a, A study of the seeds of injurious plants, their special means of distribution, protection, and the destruction of the same, also a study of the economic grasses, their distribution and structure.
Special W.—Prac. Bot. and Entom'y, a 2, 3:00-4:00. Prof Saunders.

DEPARTMENT OF CHEMISTRY.

(Ch.)

PROFESSOR SHEPARD; MR. HEPNER.

This department is equipped with the latest and most approved appliances for instruction.

The student upon beginning the subject is assigned a desk in the main laboratory. This desk is supplied with a set of reagent bottles, gas and water fixtures. In addition to these a supply of all needful apparatus, such as test tubes, generating

flasks, and the like, are furnished. The main laboratory which is located on the first floor of the Chemistry and Pharmacy Building, accommodates from eighty to one hundred students, all working at the same time.

Upon completing the necessary elementary work the student now finds a quantitative laboratory at his disposal. This laboratory accommodates twenty students working together. It is supplied with all needed quantitative apparatus such as precipitation flasks, dessicators, lamps and crucibles.

In connection with the quantitative laboratory is a balance room supplied with high grade Sartorius quantitative balances. The work is so planned that the student has laboratory work together with didatic instruction throughout the course.

The experiment station laboratories are also located at this College, and their costly and technical appliances and the practical work in constant progress there are within reach for instruction.

The following courses are offered:

1 F.—Des. Inorganic Chem., a and b 5, 8:00-9:30. Prof. Shepard, Mr. Hepner.
Pre. Ph. 2 and Ms. 2. Required in groups "A", "B" and "C".
a, History of chemistry, elements, compounds, symbols, valence, atomic weights, chemical equations, oxygen, hydrogen, nitrogen, chlorine, bromine, fluorine, iodine, sulphur, phosphorus, silicon and their compounds. Bases, salts, acids and alkalies.
b, Detection of the non-metallic elements and their compounds.
Shepard's Elements of Chemistry.

2 W.—Qual. Inorganic Chem., a and b 5, 8:00-9:30.
Pre. 1. Required in groups "A", "B" and "C".
a, The metals and their compounds. Groups of metals, separation of the metals and uses of their compounds.
b, Detection of principal metals and the working of a list of unknowns.
Shepard's Elements of Chemistry.

3 S.—El. Organic Chem. { a 4, 10:30-11:30 } Prof. Shepard. { b 1, 9:30-11:30 } Mr. Hepner.
Pre. 1 and 2. Required in groups "A", "B" and "C".

a, The principal classes of organic compounds, the characteristics and properties of each class and the uses of their various compounds.
b, The detection of principal organic compounds.
Shepard's Elementary Organic Chemistry.

4 F.—Quantitative Chemistry, b 5, 1:15-3:15. Prof. Shepard, Mr. Hepner.
Pre. 1, 2 and 3. Required in group "C".
b, The apparatus and its uses. Explanations of methods of quantitative determinations and reports of students' analyses. The quantitative analyses of typical chemical compounds, e. g., calcite, magnesium sulphate, metallic ores and coal. Students will use both the volumetric and gravimetric methods.
Fresenius' Quantitative Chemistry.

5 W.—Chemistry of Foods, a and b 5, 1:15-3-15. Prof. Shepard. Pre. 1, 2, 3 and 4.
a, Study and detection of adulterants in baking powders, milk, butter, cereals, spices, fats and other foods.
b, Determinations of (a).

6 S.—Agricultural Chem., a and b 5, 1:15-3:15. Prof. Shepard. Pre. 1, 2, 3, 4 and 5.
a, Chemistry of fertilizers, feed stuffs, fruits, vegetables, grasses, dairy products and soils.
b, Analysis of fertilizers, grasses, dairy products, feed stuffs and soils.

7 F.—Organic Analysis, a and b 5, 1:15-3:15. Prof. Shepard. Pre. 3 and 4.
a, Physical properties of organic compounds, the general relations existing between classes of compounds, and the transformation from one class into another.
b, Demonstration of (a).

8 W.—Physiological Chem., a and b 5, 1:15-3:15. Prof. Shepard. Pre. 3, 4 and Zo. 1, 2 and 3.
a, Composition of blood, muscle, albumen, fat, bone, gall, liver and products of the glands.
b, Quantitative determinations of (a).

9 S.—Industrial Chemistry, a 5, 8:30-9:30. Prof. Shepard.
Pre. 1, 2, 3 and 4.
a, Chemistry of manufacturing glass, paper, sugar, petroleum, explosives, acids, water, air, mortars, pigments, photography, alkalies and gases. Demonstrations of

examples including water pollution, purification, artificial illumination, petroleum testing, fermentation, air contamination, disinfection, ventilation, bleaches and dyeing .

DEPARTMENT OF ZOOLOGY AND VETERINARY MEDICINE.

(Zo.)

PROFESSOR MOORE; MR. EDGAR.

The work in this department is offered consecutively. Recent biological discoveries are given special consideration. The lecture room and laboratories are well supplied with water and gas. The equipment includes microscopes, dissecting instruments, sliding microtome, imbedding apparatus, thermostat incubators, autoclave, sterilizers, fossils, models and charts.

The Veterinary Department occupies a separate two-story building containing lecture room, laboratories, offices, museum and operating rooms. The operating room is furnished with an operating table, hobbles, slings and necessary instruments for surgical work. Free clinics are held each Saturday forenoon at which the veterinary students assist and as far as possible perform the operations under the direction of the instructor. While no advanced courses in veterinary medicine are offered, special work may be arranged for those desiring to enter the profession, giving them the equivalent of the first year's work in any of our three-year Veterinary Colleges.

The subsequent courses are descriptive of the work offered:

1 F.—Elementary Zoology, a 4, b 1, 10:30-11:30. Mr. Edgar. Required in groups "A", "B" and "C".
a, Discussion of types of branches and classes of animals, giving a general survey of the animal kingdom.
b, Dissection of typical invertebrates and vertebrates.
Text-book to be announced.

2 S.—Advanced Physiology, a 5, 8:30-9:30. Mr. Edgar. Pre. 1, Ph. 2 and Ch. 2. Required in groups "A" and "C".

a, The principles of human physiology with demonstrations and experiments as opportunity affords.
Thornton's Physiology.

3 W.—Advanced Zoology, a and b 5, 8:30-9:30. Mr. Edgar.
Pre. Zo. 1 and 2.
a, Discussuion of the development, principles of classification, comparative morphology, etc. of animals.
b, Dissections.

4 W.—Anatomy and Physiology of the Nervous System, a 2, b 1, 3:15-4:15. Mr. Edgar.
Pre. Zo. 1 and 2. Required in Groups "A" and "B".
a, Lectures and reference work.
b, Dissections.

5 F.—Anatomical Methods, { a 3, 9:30-10:30 / b 2, 1:15- 3:15 } Prof. Moore.
Pre. Zo. 1. Required in Group "C".
a, Discussion of general morphology, osteology, arthrology, splanchnology and myology.
b, Study of bones, dissection of joints, viscera and the muscles of the cat's arm.

6 W.—Anatomical Methods, { a 3, 9:30-10:30 / b 2, 9:30-11:30 } Prof. Moore.
Pre. Zo. 5. Required in group "C".
a, The vascular, lymphatic and peripheral nervous system.
b, Dissections.

7 S.—Vertebrate Histology, { a 1, 2:15-3:15 / b 4, 1:15-3:15 } Mr. Edgar.
a, Quizzes and reference work.
b, Preparation, imbedding, sectioning and study of tissues and organs.
Normal Histology. George A. Piersol.
Vertebrate Histology. Gage and Kingsbury.

8 F.—Veterinary Medicine, a 5, 1:15-2:15. Prof. Moore.
Zo. 3, 4, 5 and 6, and Py. 7, 8 and 9, can with advantage be taken before Zo. 7. Required of all students in Agriculture.
a, Diseases of the respiratory and digestive systems.

9 W.—Veterinary Medicine, a 5, 2:15-3:15. Prof. Moore.
Pre. 8.
a, Diseases of the skin and locomotory apparatus.

10 Veterinary Medicine, a 5, 2:15-3:15. Prof. Moore.
Pre. 9.
a, Contagious and infectious diseases, their causes, symp-

toms and treatment, with special reference to their eradication and control.

11 W.—Veterinary Medicine, a 3, 3:15-4:15. Prof. Moore.
a, This course is designed to meet the requirements of those students taking the short courses in Agriculture and Dairying, and will include a discussion of the more important diseases of farm animals.

12 W.—Principles of Horse-shoeing, a 1, b 2. Prof. Moore.
a, The anatomy of the foot, the preparation of the foot, fitting of shoes, normal and pathological shoeing.
b, Practical shoeing.

13 W.—Bacteriology, { a 2, 10:30-11:30 / b 3, 1:15- 3:15 } Mr. Edgar.
a, Bacteriological methods, the principles of sterilization, preparation of culture media, making and examining cultures, etc.
b, Laboratory.
Sternberg's Bacteriology.
Abbott's Bacteriology.
Moore's Laboratory Directions for Beginners in Bacteriology.

DEPARTMENT OF LANGUAGES.
(Ln.)

PROFESSOR WHEELER; MISS DUBOIS.

The student pursuing work along scientific or technical lines is virtually compelled to have some knowledge of either German or French, while the importance of Latin is recognized by almost everyone.

Two years of language is required for the degree of Bachelor of Science in group "A" and one year in groups "B" and "C". This work should be consecutive in whatever language the student elects. In such technical "majors" as Engineering, French is advised, in most of the natural or biological sciences German will be found preferable, while in the more literary work Latin is the most suitable.

The following work in Latin, German and French is offered, Viz:

1 F.—Latin, a 5, 1:15-2:15. Miss DuBois.
Pre. Eh. 3.
a, Primary principles of the language, including inflections and easy syntax, with constant drill in the vocabulary necessary for reading Cæsar.
Bellum Helveticum.

2 W.—Latin, a 5, 2:15-3:15. Miss DuBois.
Pre. 1.
a, Continuation of 1, more attention to etymology and syntax by means of daily translations from English into Latin.
Bellum Halveticum.

3 S.—Latin, a 5, 2:15-3:15. Miss DuBois.
Pre. 2.
a, Completion of Bellum Halveticum with continuation of syntax and composition.

4 F.—Latin (Cæsar), a 5, 10:30-11:30. Miss DuBois.
Pre. 3.
a, Selections from Cæsar and Nepos, thorough study of Latin Grammar, with daily exercises in prose composition.
Arrowsmith.
Allen and Greenough's Latin Grammar.

5 W.—Latin (Virgil), a 5, 10:30-11:30. Miss DuBois.
Pre. 4.
a, Translation of books I and II of the Aeneid with special attention to rhetorical figures and mythological references as well as to scansion and different styles of Latin poetry with prose composition every day.

6 S.—Latin (Virgil), a 5, 10:30-11:30. Miss DuBois.
Pre. 5.
a, Translation of books III and IV of the Aeneid with continuation of work indicated in 5.

NOTE—In addition to the above work in Latin, the following three courses are offered for the benefit of graduate students, or others who may have the opportunity to continue their study of this language. Hours must be arranged to suit teachers and students.

F.—Latin (Virgil), a 5. Miss DuBois.
a, Books V and VI of the Aeneid, with daily exercises in rendering English into Latin.

W.—Latin (Cicero), a 5. Miss DuBois.
a, Study of first, second and third of Cicero's Orations

against Catiline, advanced syntax, and careful consideration of this period of Roman history.

S.—Latin (Cicero), a 5. Miss DuBois.

a, Cicero's Orations continued, the fourth against Catiline, followed by the Manilian Law or Poet Archias with Roman history and Latin syntax.

7 F.—German, a 5, 1:15-2:15. Prof Wheeler.

Pre. Eh. 3.

a, Introductory course, elementary grammar, pronunciation, elementary exercises in translating from English into German and German into English. Reading in this course will be begun early.

Lange's Method.

8 W.—German, a 5, 2:15-3:15. Prof. Wheeler.

Pre. 7.

a, Grammar, reading, translation of easy sentences from English into German, translation at sight and by ear, dictation exercises and memorizing of selected passages of prose and poetry. Exercises in conversation, translation of selected stories and easy poems.

Lange's Method.

9 S.—German, a 5, 2:15-3:15. Prof. Wheeler.

Pre. 8.

a, Continuation of course 8 with special drill on irregular verbs and idiomatic expressions. A considerable amount of easy German prose will be read in this course and the more difficult passages accurately translated.

Lange's Method.

10 F.—German, a 5, 10:30-11:30. Prof. Wheeler.

Pre. 9.

a, Grammar, derivation and composition of words, composition based on the works read. A large amount of reading on various topics selected from the works of nineteenth century writers will be done in this course. Translation at sight and by ear.

Joynes-Meissner's Grammar will be used for reference.

11 W.—German, a 5, 10:30-11:30. Prof. Wheeler.

Pre. 10.

a, Grammar, advanced study of syntax, composition, German literature of the classical period. Selections from the works of Schiller and Goethe will be read and the more difficult passages explained and translated. The lives and times of Goethe and Schiller will be discussed

in the class. Rapid dictation on subjects connected with the literature of this period.
Joynes-Meissner's Grammar for reference.

12 S.—German, a 5, 10:30-11:30. Prof. Wheeler.
Pre. 11.
a, Course in scientific German designed to familiarize students with the more common terms used in the sciences. Extensive reading and translation. Composition and dictation exercises on scientific subjects.
Gore's Scientific German Reader will be used as the basis of the work.

13 French, a 5, 9:30-10:30. Prof. Wheeler.
Pre. Eh. 3.
a, Grammar and special drill in pronunciation. Translation of easy English sentences into French. Elementary reading and translation.
Fraser and Squair's Grammar.
Super's Reader.

14 French, a 5, 9:30-10:30. Prof. Wheeler.
Pre. 13.
a, Pronunciation and grammar, translations into French, translations at sight and by hearing, dictation exercises, memorizing of selections of prose and poetry.
Fraser and Squair's Grammar.
Super's Reader.

15 S.—French, a 5, 9:30-10:30. Prof. Wheeler.
Pre. 14.
a, Grammar continued, idioms and syntax, study of the subjunctive mood and irregular verbs, translation at sight and by ear, memorizing of prose and poetry, dictation and conversation exercises. In this course a large amount of easy French will be read.
Fraser and Squair's Grammar.

16 F.—French, a 5, 2:15-3:15. Prof. Wheeler.
Pre. 15.
a, Continuation of course 15. Grammar, composition based upon the works read, reading and translation of a large number of selections drawn from the works of the nineteenth century writers. Dictations.
Fraser and Squair's Grammar.

17 W.—French, a 5, 1:15-2:15. Prof. Wheeler.
Pre. 16.
a, Grammar and composition. Several easy classical plays

will be read and the lives of the most important writers and the customs of the seventeenth century will be discussed.

Dictations upon literary subjects once a week.

Fraser and Squair's Grammar.

18 S.—French, a 5, 1:15-2:15. Prof. Wheeler.

Pre. 17.

a, In this course a large amount of scientific French will be read and selected passages carefully translated. Translation by ear and at sight, dictation exercises on scientific subjects.

Simples Lectures sur les Sciences, les Arts et l'Industrie. Garrigues et Monvel.

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE.

(Eh.)

PROFESSOR EYERLY ; MISS DUBOIS.

In this department the aim is to make the study of language and literature practical in the fullest sense of the term. Language is regarded as an instrument for the performance of a large part of the most important and most delicate work of life. Literature is studied largely with the view both of discovering such principles and processes of thought building as the student may embody in original composition, and of finding such truths as will guide him in his reading, heighten his appreciation of good literature, and quicken his conception of life.

The following courses are given:

1 F.—Rhetoric, a 5, 9:30-10:30. Miss DuBois.

a, The choice of words, phraseology, and special objects of style. Genung's Outlines of Rhetoric is used as a guide, but many exercises are taken from Hill's Foundations of Rhetoric and Scott and Denney's Composition Rhetoric. In connection with the work in Rhetoric throughout the two terms, there will be studied the following English classics: The Sir Roger de Coverly Papers in the Spectator; Goldsmith's The Vicar of Wakefield;

Cooper's The Last of the Mohicans; Burke's Speech on Conciliation with America. Students beginning this course are expected to have a practical knowledge of the facts of some advanced grammar. If they are only slightly deficient in this knowledge they may make up the deficiency by taking, along with the Rhetoric during the Fall term, instruction in a special class in Buehler's Practical Exercises.

2 W.—Rhetoric, a 5, 10:30-11:30. Miss DuBois.
Pre. 1.
a, Continuation of course 1. The sentence and the paragraph.

3 S.—American Literature, a 5, 8:30-9:30. Prof. Eyerly.
Pre 2.
a, A general survey of American literature and the study of a few of the most important works.
Occasional essays on assigned topics.

4 W.—English Literature; a 3, 9:30-10:30. Prof. Eyerly.
Pre. 3. Required in groups "A", "B" and "C".
a, An historical view of English literature and the study of some representative masterpieces.
Occasional essays on assigned topics.

5 S.—English Classics, a 3, 9:30-10:30. Prof. Eyerly.
Pre. 1, 2 and 3.
Studies from the following: Pope's Translation of the Iliad (Books I, VI, XXII and XXIV); Milton's L'Allegro, Il Penseroso, Comus and Lycidas; Macaulay's Essays on Milton and Addison; George Eliot's Silas Marner; Scott's Ivanhoe; Shakespeare's Macbeth; Tennyson's Princess; Coleridge's Ancient Mariner; Lowell's Vision of Sir Launfal.

6 F., W. and S.—Oratory and Argumentation, 3:15-4:15. Prof. Eyerly. Required in groups "A", "B" and "C".
a, The study of master pieces of oratory and argumentation. This work continues throughout the year, three times a week in the Fall term, and once a week in the Winter and Spring terms. Each member of the class must prepare and deliver in public at least three original productions. All candidates for the Bachelor's Degree are required to take this course and should do so during the Junior year.

7 F.—Shakespeare, a 5, 2:15-3:15. Prof. Eyerly.
Twelve plays studied in class.

8 W.—Milton's Paradise Lost and Dante's Divine Comedy (in English), a 5, 2:15-3:15. Prof. Eyerly.
9 S.—Modern Essayists, a 5, 2:15-3:15. Prof. Eyerly. Lamb, DeQuincey, Macaulay, Carlyle, Emerson and Matthew Arnold.
10 F.—Chaucer, and Lounsbury's History of the English Language, a 5, 2:15-3:15. Prof. Eyerly.
11 W.—Tennyson or Browning, a 5, 8:30-9:30. Prof. Eyerly.
12 S.—Modern Fiction, a 5, 10:30-11:30. Prof. Eyerly. Scott, Dickens, Thackery and George Eliot.

DEPARTMENT OF HISTORY, ECONOMICS AND PHILOSOPHY.

(H-P.)

DR. CHALMERS; PROF. HARDING.

The work in History and Economics is designed to give that information and training which are requisite to intelligent citizenship; to enable the students to trace the genesis and development of political institutions, and especially to awaken in him an enthusiasm for personal individual effort. Courses 1-3 should precede all work in political science, sociology, and economics. Especial effort is made in courses 1 and 2 to aid the student in acquiring habits of careful and systematic use of the material with which he works. In the more advanced courses students are sent to original sources of information so far as possible. The topical and library methods are for the most part adopted as best calculated to develop the individual powers of the student.

The studies in Philosophy are intended to help the student form habits of close, careful and logical analysis and reasoning; to interest him in considering questions of a subjective character and those which pertain more especially to his own rational nature and the organism of the state. The work is begun by a study of Psychology from a biological standpoint. Man as an individual is first considered and then as a part of

the social organism where he becomes a factor in the social and political forces of the world. Text-books are used where they are found to be of real service, supplemented by lectures and class discussions based on assigned readings and original and individual work of students.

The following courses are offered:

1 W.—General History, a 5, 8:30-9:30. Prof. Harding.
Pre. Eh. 3, Ms. 4. Required in groups "A", "B" and "C".
a, History of Europe to the middle ages, with brief preliminary survey of Oriental history; text-book, reference work, special study of a few carefully selected sources and training in the preparation of historical papers.

2 S.—General History, a 5, 10:30-11:30. Prof. Harding.
Pre. 1. Required in groups "A", "B" and "C".
a, Continuation of 1. The middle ages, reformation and renaissance periods, rise and development of modern nations.

3 F.—English History, a 5. Prof. Harding.
Pre. 1 and 2.
a, General survey of the History of England. The influence of English history upon American institutions makes this study one of particular interest. Text-book, collateral readings, written papers and the thorough study of several important constitutional documents will be features of the course.
Larned's History of England.

4 F.—Ancient Philosophy, a 5, 2:15-3:15. Dr. Chalmers.
Pre. 1 and 2.
a, The aim of this course is to make a study of such systems of the ancient philosophy as have most powerfully affected the thought and the literature and the institutions of the civilized world.
In the fall of 1903 the special subject of study will be Hebrew philosophy and literature.
Text-books, lectures and assigned readings.

5 W.—American History, a 5. Prof. Harding.
Pre. 1 and 2.
a, Constitutional and political history of the United States from 1783 to 1829. The growth of Union, formation of the constitution, the development of nationality, and the beginnings of the conflict between nationality and slavery. This course pre-supposes an elementary knowledge

of United States history. Lectures, topics, reports, study of important documents and orations.
Channing's Student's History of the United States.

6 S.—American Institutions, a 5, 9:30-10:30. Prof. Harding.
Pre. 1 and 2. Required in groups "A" and "C".
a, Study of the structure, nature and working of American governmental and political institutions, federal and state; the federal system, constitutional interpretation, working relations of the national and state governments, state and territorial system, party machinery and methods, nature and action of public opinion. Supplemented by lectures on political science and American constitutional law.
Bryce's American Commonwealth (abridged edition).

7 S.—Psychology, a 3, 3:15-4:15. Dr. Chalmers.
Pre. Eh. 6, Ms. 6, Bt. 2, Zo. 3, Ph. 3 and H-P. 1-3.
Required in groups "A", "B" and "C".
a, Study of nervous mechanism at disposal of the mind. Discussion of the various phases of mental activity. Special attention given to the cultivation of mental faculties and will power.
Halleck's Psychology and Psychic Culture.
Also selections from Witmer's Analytic Psychology.
Lectures and discussion.

8 F.—Sociology, a 3, 3:15-4:15. Dr. Chalmers.
Pre. 7. Required in groups "A", "B" and "C".
a, This course is designed to introduce the student into the rich field of social science. He is here required to familiarize himself with the principal forms of social organizations; the thoughts, sympathies, purposes and virtues that make society possible; with the benefits society confers and the conduct that worthy membership of it requires. Such study lies at the foundation of all further consideration of social problems.
Gidding's Elements of Sociology.
Lectures and discussions.

9 F.—Municipal Government, a 3, 10:30-11:30. Prof. Harding.
Pre. 3, 5 and 6.
a, A study of municipal government, with particular reference to the legal relation of the city to the state, and to the economic and social problems of American cities. Discussions, reports and papers.

10 F.—American Territorial Development, a 2, 10:30-11:30. Prof. Harding.
Pre. 5 and 6.
a, The acquisition of territory and the problems that have from time to time grown out of it. Influence of frontier conditions upon nationality; slavery, democracy and the development of the American type of man.

11 F.—Comparative Politics, a 3, 1:15-2:15. Prof. Harding.
Pre. 6.
a, A comparative study of the constitutions and governments of the chief European nations. Lectures, discussions and reports.
Woodrow Wilson's "The State."

12 W.—Race Development, a 5, 10:30-11:30. Dr. Chalmers.
a, The plan of this course is to take certain types of intellectual and literary forms in their germs and trace their growth and elaboration through the more complex stages of human development.
In the Winter of 1904 the special subject of study will be the development of the English Drama, beginning with the Mystery Plays.
Text-books, lectures and assigned readings.

13 W.—International Law, a 5, 9:30-10:30. Prof. Harding.
Pre. 5, 6 and 8.
a, Sources of International law examined. Rights and obligations of nations connected with peace, war and neutrality.
Class discussions and papers.
Lawrence's International Law.

14 S.—Ethics and Applied Psychology, a 5, 10:30-11:30. Dr. Chalmers.
Pre. 7, 8 and 12. Required in groups "A", "B" and "C".
a, The course in Ethics includes a study of Ethical principles, grounds of governmental authority, discussions on conduct of individuals and nations.
Hickok's Moral Science.
Course in Applied Psychology is given. Lectures and selected readings.

DEPARTMENT OF MATHEMATICS AND ASTRONOMY.

(Ms.)

PROFESSOR BROWN.

The general work of this department is planned with the

view of cultivating in the student habits of systematic and accurate thinking as well as of giving a knowledge of methods in dealing with the practical problems that may arise in college work and in future life. Independent effort is encouraged to the greatest possible extent, the solution of problems and original demonstrations forming an important part of each course. In mathematics, courses 1, 2, 3, 4, 5 and 7 mentioned below are required of all students; course 6 of all except students studying Agriculture or Horticulture, and course 8 of students following group "B".

In addition to these, other courses are offered for election, including the prerequisites required in the other departments, together with subjects designed primarily for students who may wish to pursue special work in mathematics.

In Astronomy one course is required for graduation. This is intended to give such a knowledge of the science as an educated person should possess. A course in Practical Astronomy is also offered for election. The class room work of both these courses is supplemented by the use of instruments in the observatory. These include a five inch equatorial telescope, a transit instrument, a sidereal clock and a chronograph.

The following courses are offered:

1 W.—Algebra, a 5.
Required of Preparatory Students.
a, The fundamental operations, involution, evolution, factors and multiples.
Beman & Smith's Elements.

2 S.—Algebra, a 5.
Pre. 1. Required of Preparatory Students.
a, Fractions, simple equations of the first degree, indices, complex numbers.
Beman & Smith's Elements.

3 F.—Algebra, a 5, 10:30-11:30.
Pre. 2. Required of Sub-Freshman students.
a, Quadratic equations, inequalities, logarithms, ratio, variation, proportion.

4 W.—Geometry, a 5, 9:30-10:30.
Pre. 2.—Required of Sub-Freshman students.

a, Especial emphasis is laid on original solutions.
Sander's Plane Geometry.

5 S.—Geometry, a 5, 9:30-10:30.
Pre. 4. Required of Sub-Freshman students.
a, Completion of Plane Geometry.

6 F.—Solid Geometry, a 3, 9:30-10:30.
a, All the important principles of Solid Geometry will be covered.

7 W.—Trigonometry, a 5, 9:30-10:30.
Pre. 3 and 5. Required in groups A, B and C.
a, The trigonometric functions, analytically and graphically; the use of logarithms, the solution of right and oblique triangles.
Wentworth's Trigonometry and Surveying.

8 F.—Algebra, a 5, 8:30-9:30.
Pre. 3. Required in group "B".
a, A review of the quadratic equation, the progressions, imaginary quantities, inequalities, permutations and combinations, the binomial theorem, logarithms.

9 F.—Spherical Trigonometry, a 2, 8:30.
a, The principles and applications to solutions of problems.
Wentworth.

10 W.—Analytic Geometry, a 5, 8:30-9:30.
Pre. 7 and 8. Required in group "B".
a, The point, right line, the conics, the general equation of the second degree.
Nichol's Analytic Geometry.

11 S.—Differential Calculus, a 5, 10:30-11:30.
Pre. 10. Required in group "B".
a, The differential co-efficient, the formulas of differentiation, the expansion of functions, successive and partial differentiation, indeterminate forms, tangents and normals, radius of curvature, evolutes and involutes, envelopes, maxima and minima.

12 F.—Integral Calculus, a 3, 8:30-9:30.
Pre. 11.—Required in group "B".
a, Integration as the inverse operation of differentiation, integration of rational fractions, integration by rationalization, by substitution, reduction formulas, integration as a summation, rectification of curves, areas and volumes with numerous problems.

13 W.—Analytic Mechanics, a 5, 2:15-3:15.
Pre. 12.—Required in group "B".

a, The application of analytic geometry and differential and integral calculus to the problems of mechanics. The laws of equilibrium, motion, work and energy of particles and rigid bodies.

14 S.—Analytic Mechanics, a 5.
Pre. 13.
a, A continuation of course 13. Lectures and references.

15 F.—Advanced Analytic Geometry, a 5.
Pre. 11.
a, The general equation of the second degree, the analytic geometry of space, the point, plane, straight line, surfaces of the second order.

16 W.—Theory of Equations and Determinants, a 5, 1:15-2:15
Pre. 9.

17 W.—Differential Equations, a 5, 2:15-3:15.
Pre. 13.
Johnson's Differential Equations.

18 F.—Astronomy, a 5, 9:30-10:30.
Pre. 7. Required in groups "A", "B" and "C".
a, Astronomical instruments, astronomical co-ordinates, the earth, moon and sun; the planets, fixed stars and constellations; observations and measurements with the equatorial and the transit instruments.
Young's Manual.

19 S.—Practical Astronomy, a 3.
Pre. 7 and 14.
a, Astronomical problems; use of ephemeris.

DEPARTMENT OF PHYSICS AND ELECTRICAL ENGINEERING.

(Ph.)

PROFESSOR MATHEWS; MR. HOY.

The various courses offered by this department are designed for four classes of students.

FIRST: Those desiring a scientific training where physics is necessary as a foundation subject.

SECOND: Those expecting to gain some knowledge of the principles of physics and to fit themselves as teachers of science in our high schools.

THIRD: Those wishing to make physics their major subject.

FOURTH: Those desiring to fit themselves for electrical engineers.

From the fact that physics is one of the foundation sciences and that a knowledge of its laws is necessary to every student seeking a scientific training, the department has been well fitted with rooms and appliances to provide this training. Its lecture rooms are well provided with arm-rest chairs. The laboratories are well lighted and provided with non-vibratory piers. Water, gas and electricity are provided for the recitation rooms, the dark room and laboratories.

This department is housed in the engineering and physics building. Its facilities for instruction are equal to those of any in the Northwest.

The laboratory equipment includes such expensive pieces as analytical balances, laboratory clock making electrical contact every second, spectroscope, microscope, photometers, stereopticon (arc light), Carhart-Clark standard cells, several different types of dynamos, electro-motor, galvanometers, storage battery, induction coils, ammeters, magnetometers, voltmeters, Wheatstone bridges, polariscope, quadrant electrometer, lathes, and wireless telegraphy and X-Ray apparatus.

A desirable arrangement of work for those who wish to take electrical engineering is shown on page 74. The following is the list and descriptions of the courses offered in this department.

1 F.—Elementary Physics, { a 3, 8:30-9:30 / b 2, 8:00-9:30 } **Prof.** Mathews.
Pre. Ms. 2.
a, Properties of matter, mechanics of solids, and mechanics of fluids.
b, Laboratory work showing principal phenomena and proving laws governing them in properties of matter, mechanics of solids and mechanics of fluids.
Carhart and Chute's High School Physics.

Chute's Practical Physics—Laboratory Manual.

2 W.—Elementary Physics, { a 3, 8:30-9:30 / b 2, 1:15-3:15 } Prof. Mathews.

Pre. 1.

a, Heat, sound and light.

b, Laboratory work in heat, calorimetry, velocity of sound, color, refraction and reflection of light.

Carhart and Chute's High School Physics.

Chute's Practical Physics—Laboratory Manual.

3 S.—Elementary Physics, { a 4, 10:30-11:30 / b 1, 1:15- 3:15 } Prof. Mathews

Pre. 2.

a, Electricity and Magnetism.

b, Magnetism, static electricity, arrangement of batteries, detection of the electric current and its direction, induced currents and measurements of electrical resistances.

Carhart and Chute's High School Physics.

Chute's Practical Physics—Laboratory Manual.

4 F.—General Physics, { a 3, 8:30-9:30 / b 2, 8:00-9:30 } Prof. Mathews.

Pre. 1, 2, 3 and Ms. 7. Required in group "B" and "C".

a, Mechanics of solids and fluids and heat with numerous examples.

b, Exact measurements of mass, distance, time, calorimetry, etc.

Hastings and Beach.

Austin and Thwing.

5 W.—General Physics, { a 3, 10:30-11:30 / b 2, 1:15- 3:15 } Prof. Mathews.

Pre. 4.

a, Electricity and its applications in the dynamo, motor and transformer, electric light and study of electrical and magnetic fields.

b, Laboratory work on topics mentioned in (a).

Hastings and Beach.

Austin and Thwing.

6 S.—General Physics, { a 4, 8:30-9:30 / b 1, 1:15-3:15 } Prof. Mathews.

Pre. 5.

a, Nature and velocity of sound, refraction and reflection of light, interference and color.

b, Laboratory work on topics mentioned in (a).

Hastings and Beach.
Austin and Thwing.

7 F.—Advanced Physics, { a 3, 10:30-11:30 / b 2, 1:15- 3:15 } Prof. Mathews.
Pre. 6, Ms. 7 and 12.
a, Mechanics, kinematics, kinetics, mechanics of fluids, and heat and its applications.
b, Laboratory work and measurements covering topics mentioned in (a).
Nichols and Franklin, Vol I.
Nichols' Laboratory Guide.

8 W.—Advanced Physics, { a 3, 9:30-10:30 / b 2, 10:30-11:30 } Prof. Mathews.
Pre. 6 and Ms. 12. Required in Mechanical Engineering, in group "B".
a, Magnetism, electricity, electrolysis, induction currents, primary batteries, electric oscillations and waves.
b, Laboratory work on topics of (a).
Nichols and Franklin, Vol. II.
Nichols Laboratory Guide.

9 S.—Advanced Physics, { a 3, 9:30-10:30 / b 2, 1:15- 3:15 } Prof. Mathews.
Pre. 6 and Ms. 12.
a, Nature and motion of sound, physical theory of music, nature and propagation of light, refraction, reflection, interference, color and polarization.
b, Laboratory work on topics of (a).
Nichols and Franklin, Vol. III.
Nichols' Laboratory Guide.

10 F.—Heat, { a 3, 2:15-3:15 / b 2, 1:15-3:15 } Prof. Mathews.
Pre. 7 and Ms. 12.
a, Sensible and latent heat, dynamical generation of heat, thermometry, calorimetry, specific heat, atomic and molecular heat capacities, evaporation, ebullition, vapor densities, cooling, diathermacy, conductivity and dynamical equivalent of heat.
b, Laboratory work covering topics mentioned in (a).
Preston's Theory of Heat.
Maxwell's Heat.

11 W.—Sound. { a 3, 1:15-2:15 / b 2, 1:15-3:15 } Prof. Mathews.
Pre. 9 and Ms. 12.

a, A mathematical study of sound and the theory of music.
b, Advanced laboratory work in sound.

12 S.—Light, { a 3, 8:30-9:30 / b 2, 1:15-3:15 } Prof. Mathews.
Pre. 9 and Ms. 12.
a, Shadows and images, spectrum, velocity of light, color, phosphorescence, fluorescence, diffraction, measuring waves, prisms and polarization.
b, Laboratory work along same line as (a).
Preston's Light.

13 F.—Electricity and Magnetism, { a 3,2:15-3:15 / b 2, 1:15-3:15 } Prof. Mathews. Pre. 6 and Ms. 12.
a, Magnetism, static electricity, electric capacity, magneto-motive force, electro magnets, electrodynamometers, grouping of cells, methods of measuring magnetism, current strength, voltage and resistance, thermo-electricity, dynamos, alternators, accumulators and transformers.
b, Laboratory work on the above topics.

14 W.—Dynamo Electric Mach., { a 3, 9:30-10:30 / b 2, 9:30-11:30 } Mr. Hoy.
Pre. 13 and Ms. 12. Required in Electrical Engineering, group "B".
a, Theory, magnetic circuit, equation and computation of parts of dynamo, construction of armature and field magnets and types of dynamos.
b, Computation and construction of parts of small dynamos.
Thompson's Dynamo Electric Machinery.

15 S.—Dynamo Electric Mach., { a 3, 9:30-10:30 / b 2, 1:15- 3:15 } Mr. Hoy.
Continuation of course 14.

16 F.—Alternating Currents, { a 3, 10:30-11:30 / b 2, 1:15- 3:15 } **Mr. Hoy.**
Pre. 15 and Ms. 12.
a, Theory of alternating currents, and the study of dynamos, motors, transformers, etc.
b, Laboratory work on topics of (a).
Jackson's Alternating Currents.

17 W.—Elec. Light and Power Distribution, { a 3, 8:30- 9:30 / b 2, 8:30-10:30 }
Mr. Hoy. Pre. 16 and Ms. 12.
a, Electric lighting, methods of wiring, efficiency of transmission, cost of material and construction.

b, Laboratory work on topics of (a).

18 S.—Design of Power Stations, { a 3, 8:30- 9:30 / b 2, 8:30-10:30 } Mr. Hoy.
a, Location of Power Plant. Best arrangement of machinery to conserve cost, space, etc.
b, Drawing room work in designing.

(sp.), Ph. W.—Engineering Physics, a 3, 10:30-11:30. Mr. Hoy.
Topics selected and discussed in elementary physics of particular value to those taking the short course in Steam Engineering.

DEPARTMENT OF MECHANICAL ENGINEERING.
(Me.)

PROFESSOR SOLBERG; MR. HOY.

The object of the work offered is to give students a thorough training in the theoretical principles underlying the science of mechanics and machines and at the same time to enable them to become practically familiar with some of the numerous applications of these principles which are of such inestimable value to the human race.

The instruction is both theoretical and practical. The usual methods of text book study and lectures are employed, but the student is required to put into practice, as far as possible, the instruction which he receives. Hence the work of the class-room is supplemented and practically exemplified by practice in shops. The student not only studies the theories of constructing and operating machinery; but in the drawing room he designs, and in the shops constructs and operates such machines. It is believed that those who complete this course will be fitted to fill responsible positions in manufacturing establishments. It is important that French be elected as the language that is required in addition to English.

The department is located in the new Engineering building. The workshops are supplied with a large variety and

quantity of tools. The wood-shop is furnished with twenty sets of carpenter tools and with eight wood-turning and one pattern-maker's lathe, a scroll saw and a complete set of tools for each. There is also a variety of special tools for wood-working.

The machine shop is furnished with engine lathes, planer, drill press, emery wheels and a great variety of hand tools. The machinery is driven by a 25-H. P. Atlas engine. A supply of instruments for testing work, such as indicators, planimeters and tachometers, are at the disposal of the students of the department.

Two courses in Architectural Drawing and Designing are offered. Additional work along this line will be given to students who desire it.

A large number of pictures, drawings, and illustrative material has been recently added to the equipment through the liberality of manufacturers, and friends of the College.

The following work is offered:

1 F. and W.—Carpentry, b 3, 1:15-3:15. Prof. Solberg.
b, Talks on the care and use of different tools. Practice at the bench in making the various joints used in wood construction.

2 W.—Wood Turning, b 3, 1:15-3:15. Mr. Hoy.
Required in group "B".
b, Wood turning in hard and soft woods.

3 F., W. and S.—Forging, b 3, 1:15-3:15. Mr. Hoy.
Required in group "B".
b, Bending, drawing, up-setting, welding and forging iron.

3c F., W. and S.—Forging (steel), b 2, 1:15-3:15. Mr. Hoy.
Required in group "B".
b. Steel manipulation, including cold chisels, punches and lathe and planer tools, tempering and hardening.

4 F., W. and S.—Machine shop, b 2, 1:15-3:15. Mr. Hoy.
Required in group "B".
b, Filing, clipping and fitting, work with different machines such as lathes, planer and drill press.

4c F., W. and S.—Machine shop, b 3, 1:15-3:15. Mr. Hoy.
Required in group "B".

b, Construction of some machine or appliance from designs made in drawing room.

5 F., W. and S.—Mechanical drawing, 1:15-3:15. Prof. Solberg. Pre. Ar. 1. Required in group "B".
b, Instrumental drawing, geometrical problems, and parts of machines.
This work is offered during the entire year, and at hours convenient to teacher and students.

5c F.—Architectural Drawing, b 5, 1:15-3:15. Prof. Solberg. Pre. Me. 5.
b, Rendered drawings of simple buildings, examples of various orders, giving facility in draughtmanship, familiarizing students with principles.

6 W, S, F—Machine Design, { b2, b3, b2, } 1:15-3:15. Prof. Solberg.
Required in group "B".
b, Solution of various problems involving the design of simpler parts of a machine.
Klein's Machine Designs.

6c W.—Architectural Design, b 5, 1:15-3:15. Prof. Solberg. Pre. 1 and 2.
b, Principles of planning introduced in practical problems, exercises in composition and details.

7 F.—Kinematics, b 5, 1:15-3:15. Prof. Solberg.
b,Geometry of machinery, problems in the design of motion transmitting appliances.

8 W.—Engineering Design, b 5, 1:15-3:15. Prof. Solberg.
b, Solution in the drawing room of some practical problems in design and making working drawings of same.

8c S.—Engineering Design, b 5, 1:15-3:15. Prof. Solberg.
Continuation of course 8.

9 F.—Elements of Mechanism, a 5, 9:30-10:30. Prof. Solberg.
a, Elements of machinery, velocity ratios, graphic representation of speed and acceleration. Motion transmitting parts, such as gears, belts, cams, screws, link work. Automatic feeds, parallel and quick return motions. Designing.
Wood and Stahl.

10 S.—Steam Engine, a 5, 8:30-9:30. Prof. Solberg.
Required in group "B".
a, Study of the modern steam engine, slide valve, and when

in combination with independent cut-off valves, link motion and Zeuner diagrams, reciprocating parts and indicator practice.

Holmes' Steam Engine.

11 F.—Steam Boilers, a 5, 8:30-9:30. Prof. Solberg.

a, Advantages and disadvantages of using the various forms of boilers, methods in construction, tubes and flues, plates, riveting, bracing, grate and heating surface, gauges and feed appliances, setting, care and operation.

Wilson and Flather's Steam Boilers.

13 W.—Strains in Framed Structures, a 5, 8:30-9:30. Prof. Solberg.

a, Graphical determination of stresses under action of static, moving and wind forces.

Green, Vol. 1.

14 S.—Farm Enginering, a 2, 8:30-9:30. Prof. Crane.

a, A short course for students in Steam Engineering.

15 S.—Algebra, a 3, 8:30-9:30. Mr. Hoy.

a, A special course for students in Steam Engineering.

SHORT COURSE IN PRACTICAL STEAM ENGINEERING.

Modern agricultural methods have introduced in such a marked degree, the steam engine as a substitute for animal power that the consequent growing demand for steam engineers has led the college to arrange a two term course of study for the special training of steam (especially traction) engineers. Extreme care has been taken only to offer such work as shall prove valuable to the man running the traction engine or other machinery. A relatively large amount of shop work, engine repairing and engine running is introduced, with a proper proportion of recitations in closely allied subjects. Upon the satisfactory completion of this work the student is given a certificate which is virtually the same as a license in this state to run an engine.

Students who complete the work of the fall term of the preparatory department will be admitted as candidates for

certificates without entrance examinations. Others are expected to pass satisfactory examinations in Arithmetic and English as far as the preparatory class carries those subjects in the fall term. Also to read intelligently and show such general elementary training as shall indicate that they are able to understand the subjects embraced in the engineering course. At present this would require preparation in Arithmetic to percentage, and in English a thorough knowledge of elements of grammar and the analysis of ordinary English prose sentences.

(Winter Term, January 4 to March 25.)

Arithmetic, a 5, ... 8:30- 9:30
Physics of Steam, a 5, ... 9:30-10:30
Civil Government, a 2, ...10:30-11:30
Physics, a 3, ...10:30-11:30
Forging, b 3, ... 1:15- 3:15
Mech. Drawing, b 2, ... 1:15- 3:15

(Spring Term, March 28 to June 16.)

Farm Engineering, a 2, ... 8:30- 9:30
Algebra, a 3, ... 8:30- 9:30
Physical Geography, a 5, ... 9:30-10:30
Steam Engine Lectures, a 5, ...10:30-11:30
Forging, b 2, ... 1:15- 3:15
Mech. Drawing, b 3, ... 1:15- 3:15
Engine Practice, b 5, ... 3:15- 5:15

DEPARTMENT OF AGRICULTURAL ENGINEERING.

(Ce.)

PROFESSOR CRANE.

The aim of the work in this department is to impart a practical knowledge of the principles of land surveying, drainage and irrigation work, road construction, and in fact, all forms of civil engineering applicable to agricultural and municipal work, together with practice in the use of surveying instruments, manuals and tables, as well as the study of theoretical text-books on the subject.

The instruments are placed in the student's hands at once and he learns how to handle them from actual experience.

After he has had sufficient practice to understand the text in describing and explaining operations a text book course in the theory of surveying is given to supplement the practice.

Attention is given to the use, care and adjustment of the instruments and the relative values of different forms for particular kinds of work.

The use and distribution of water in growing crops will be studied, the principles of irrigation being supplemented by laboratory and field work.

The following courses are offered:

1 S.—Surveying, b 2, 1:15-3:15.
Field practice in the use of surveying instruments; computations from field notes; application of trigonometric formulas in surveying computations.

2 F.—Surveying, b 2.
A continuation of course 1. Leveling and profile work; use of solar compass.

3 W.—Theory and Practice of Surveying, a 3, 1:15-3:15.
Study of text; the U. S. Manual; problems in practical surveying.

4 S.—Plotting, b 3, 1:15-3:15.
Graphical representations of fields, areas, etc., drawn to scale from field notes; profile drawing.

5 F.—Irrigation Engineering, a 5, 9:30-10:30.
A study of the development of irrigation from the earliest times; present application; use and distribution of water.

6 F.—Topographical Drawing, b 2, 1:15-3:15.
Representation of topographical features; contour lines; location of irrigation and drainage canals.

7 S.—Hydraulics, a 3, b 2, 9:30-10:30.
Study of flow of water and formulas for computation; water measurements; weirs and meters; coefficients of resistance.

8 F.—Road Construction, a 5, 9:30-10:30.
Principles, methods and materials used in the construction of roads and pavements; establishing grades; locating culverts and bridges; improvement of rural roads.

9 F.—Irrigation Experimentation, a 3, 1:15-3:15.
A general study of irrigation experiments as pursued by the different states and shown in their reports; application of different methods in South Dakota.

10 W.—Sewerage Engineering, a 5, 1:15-2:15.
Study of drainage and the disposal of water either by use in irrigation or by sewer systems and carrying streams.

11 S.—Reservoirs and Dams, a 3, 8:30-9:30.
Location, construction and maintenance of reservoirs and dams for irrigation and waterworks purposes.

12 S.—Meteorology, a 2, 1:15-2:15.
General study of the subject; storms, their formation and course; climatic changes due to man's modification of earth's surface; Signal Service work and reports.

DEPARTMENT OF DOMESTIC SCIENCE.

.... MISS WARDALL.

(Ds.)

The work of this department is designed not only to give the student a knowledge of the subjects which are so important to the house-keeper and home-maker, but in addition to develop the mind by training the hand, and at the same time teach the science of comfortable, healthful living. As an example, the work in sewing teaches the student how to make the various garments, their appropriateness under different conditions and the methods of manufacture of some of the common fabrics. Attention is given to dining room etiquette and the tasteful arrangement of the table. Several courses in applied science are offered, and all girls are required to take such work throughout the Sophomore year.

The department has ample room for its different sections of work which are well supplied with proper equipment such as sewing machines, cooking utensils and charts. A large number of illustrative samples are kept on hand for use in connection with lectures. Many books of reference and leading

magazines on the subject are kept in the general library. For scheme of work in Domestic Science, see page 72.

The following fully describes the work offered:

1 S.—Sewing, b 3, 1:15-3:15.
Required of girls in group "A".
This course aims to give students an understanding of the stitches and methods employed in plain sewing. Each student is required to prepare a model book and make a suit of underwear. This course or its equivalent is a necessary prerequisite to any other course in needlework offered in the department.

2 F.—Cooking, b 3, 1:15-3:15.
Pre. Ch. 3, Bt. 3, Ph. 3, Zo. 2.
Carbohydrates, non-starchy vegetables and proteids. Particular stress is laid upon the scientific principles involved. The work consists of lectures, assigned readings, experiments and practical cooking.

3 F.—Household Economy, a 5. 2:15-3:15.
Pre. Ch. 3, Zo. 2.
Required of all girls.
The aim is to give the student an understanding of the principles underlying general housekeeping, including house furnishing, laundry work, domestic service, chemistry of cleaning, proper serving of foods, and marketing and household buying.

4 F.—General Hygiene, a 5, 8:30-9:30.
Pre. Ph. 3, Ch. 3, Zo. 2.
Special attention is paid to the principles of personal hygiene and to the relation of the housekeeper to public health, disease germs, common contagious diseases, and means by which the housekeeper can help prevent their spread.

5 F.,S.—Sewing b 3, 1:15-3:15.
Pre. 1.
Plain dressmaking, drafting, cutting, fitting and general dressmaking. The aim is to give the necessary training to enable the student to do home dressmaking. The Vienna Tailoring System is used.

6 W—Cooking, b 3, 8:00-9:30.
Pre. 2.
Proteids, fats and fermentations, including the cooking of meats, soups, fish, game, butters and doughs.

7 W.—Foods, a 3, 9:30-10:30.

Pre. Ch. 1, 2, 3, Bt. 1, 2, 3, Ph. 1, 2, 3, Zo. 2.
Required of all girls.
Composition of the human body, classification of nutrients needed and a study of the different food stuffs as a source of supply. Food adulterations. Special study is given to the subject of dietetics. The balanced ration, combinations of foods mixed for workers, children, old persons, invalids. Practice in making proper menus for 25c to 60c per person each day.

8 W.—Foods, a 3.
Pre. 7.
Required of all girls.
A continuation of 7.

9 W.—Cooking, b 2, 1:15-3:15.
For short course and Sub-Freshman students. No Pre.
The course will consist of lectures, experiments and practical cooking. Subjects to be determined.

10 W.—Sewing, b 3, 1:15-3:15.
For short course students.
The work will include the principles of plain sewing and will be adapted to the needs of the students. This course will be followed by plain dressmaking in the Winter of 1903-1904. No pre.

11 W.—Science Lectures, a 3, 3:15-4:15.
For short course students.
The lectures will deal with subjects bearing upon domestic science. Subject matter to be determined by needs of the class. No pre.

12 W.—Household Art, b 2, 8:00-9:30.
For short course students.
This course is intended as an introduction to the subject of house furnishing and decoration. Subject matter will be determined. No pre.

13 S.—Cooking, b 3, 8:00-9:30.
Pre. 6.
Continuation of 6. Canning, preserving, pickling, making of salads, preparation of beverages and hot-weather dishes.

14 F.—Home Nursing, Emergencies and Invalid Cookery, a 5, 9:30-10:30.
Pre. 2-6.
For advanced students.

Care of sick in the home, proper clothing, moving helpless patients, bandaging, baths, foods, etc. What to do in case of such emergencies as burns, sprains, dislocations, unconscious conditions. Practice in preparing foods for invalids.

15 S.—Household Sanitation, a 5, 1:15-2:15.
Pre. Ch. 1, 2, 3, Bt. 1, 2, 3, Ph. 1, 2, 3, Zo. 2.
Study of situation of house, with a discussion of soil and drainage of land. Building materials. Construction of cellar. Plumbing, water supply, heating, lighting, ventilation, cleaning and disinfection, disposal of garbage. Lectures, readings, papers, experiments. Buildings visited and critical reports made.

16 W., S.—Sewing, b 3, Art Needle-work, 1:15-3:15.
Pre. 1.
Principles underlying drawnwork, lace making as Battenberg, point lace, crocheting, knitting, tatting. Embroidery.

17 S.—Fabrics, a 5, 10:30-11:30.
Pre. Ch. 3, Bt. 3, Ph. 3.
For advanced students.
Historical study of the manufacture of the fabrics used in the sewing room as cotton, woolen, silk and linen.

18 W.—Dietary Studies, a 5.
a, Standard menus, marketing, cooking and serving meals, with instruction in entertaining and keeping accounts.

SHORT COURSE IN DOMESTIC SCIENCE.

For the benefit of young ladies who are not able to take an extended course in the college, special work in this and allied departments is offered. Their aim is to furnish sound training and thus to give an impetus to scientific applications in practical life. A certificate will be given to those students who complete in a satisfactory manner the following:

Household Art, b 2	8:00- 9:30
Floriculture and Home Gardening, b 3	8:00- 9:30
Domestic Dairying, b 2	9:30-11:30
Cooking, b 2	1:15- 3:15
Sewing, b 3	1:15- 3:15

Science Lectures, a 3 3:15- 4:15
Music and Free Hand Drawing as desired.

DEPARTMENT OF ART.
(Ar.)

MISS CALDWELL.

The aim of the work in the Art department is to train the eye and hand to give free expression to ideas; to develop observation, reflection and interpretation. Attention is given to drawing and modeling from casts and objects for thorough study of form; painting in oil and water color from nature for appreciation of color; sketching from nature in black and white, and in color to give material from which to construct original designs. Practical application of the principles of decoration is given by work in wood-carving and pyrography and designing for art needlework for the Domestic Science department.

During the Winter term special work in public-school drawing is offered.

A certificate is given students who satisfactorily complete a three years' course of not less than five hours per week of work in these different branches:

FALL.

Design a 1, Modeling, b 2, Wood Carving, b 2 8:00- 9:30
Drawing, b 3, Oil Painting, b 2 9:30-10:30
Art History, a 2 10:30-11:30
Drawing, b 3, Wood Carving and Pyrography, b 2.. 1:15- 3:15

WINTER.

Design, a 1, Modeling, b 2, Wood Carving, b 2..... 8:00- 9:30
Drawing, b 3, Painting, b 2 9:30-10:30
Art History, a 2 10:30-11:30
Drawing, b 3, Wood Carving and Pyrography, b 2.. 1:15- 3:15

SPRING.

Design, a 1, Pen and Ink, b 2, Water Color, b 2.... 8:00-9:30

Modeling, b 2, Wood Carving and Pyrography, b 3.. 9:30-10:30
Art History, a 2 10:30-11:30
Drawing, b 3, Pyrography and Wood Carving, b 2,.. 1:15-3:15

DEPARTMENT OF MUSIC AND PHYSICAL CULTURE.

(Mu.)

MISS COLLIN; MISS VAUGHAN; MR. MANN.

This department will hereafter occupy the basement of the North building.

Any student taking special work in music must pursue whatever courses in other departments the faculty may think best unless a request from parents or guardian is received asking that the student be excused from this additional work. No major can be taken in this department; however, work above the second grade (see below) in both vocal and instrumental music can be selected as counting towards a degree, according to the general rules.

A special fee of TEN DOLLARS per term will be charged all those who take music, either vocal or instrumental. This will cover both tuition and rental of instrument.

Two lessons of thirty minutes each are given per week as the required amount of instruction needed. Pupils are expected to practice two hours each day.

Instruction and practice hours are arranged by the professor and absence from either treated the same as from any other college exercise.

Music students are expected to take part regularly in the public recitals arranged, as in no other way can they secure that self control and confidence so necessary and valuable in a musical education.

For the convenience of those who wish to make a specialty of music, the instruction offered is here set forth in grades. The studies thus arranged are intended to give a broad and thorough musical education based not only on the classic mas-

ters, but embracing the best works of modern composers.

PIANO MUSIC.

Practice in note writing, ear training, etc., is begun in the first grade. Theory of Music is taken up with grade III, followed by Harmony and Musical History with grades IV and V. This work is taken in class.

Those who complete successfully the first four grades in piano music, theory of music, one year of harmony, and give a public recital, will be given a certificate in music.

Students who complete all of the grades in piano work, two years of harmony, history of music, and give a public recital, will be given a diploma in music.

GRADE I.

Position of hands, National Course of Music.
Duvernoy, Czerny, Touch and Technic.
Schumann's Studies for the Young.

GRADE II.

Mathews' Graded Studies, Czerny, Schmidt.
Loeschhorn, Heller, Bertini. Touch and Technic.

GRADE III.

Clementi, Kulau, Heller, Bach, Czerny, Haydn.
Chopin's Valses, Zwintscher.

GRADE IV.

Bach, Clementi, Cramer, Chopin, Mozart, Mendelssohn.
Kullak, Zwintscher, Tappert's School for left hand.

GRADE V.

Bach, Moscheles, Beethoven, Compositions of Schubert.
Chopin, Handel, Schumann, Rubinstein, Greig, Liszt.
Weber.

VOICE CULTURE.

Pupils who complete the three grades below, together with theory of music and one year of harmony and give a public recital, will receive a certificate in music. To obtain a diploma, two years of harmony and one year of history of music will be required.

The work is as follows:

b, Preparation of waters, syrups, mucilages, etc., mentioned in course 3, and must be taken in connection with it.
Remington's Practice of Pharmacy.

5 S.—Pharmacy, a5, 10:30-11:30.
Pre. 3 and 4.
a, Solutions, emulsions, powders, pills, ointments, plasters; reading prescriptions.
Remington's Practice of Pharmacy.

6 S.—Pharmacy, b 5, 1:15-3:15.
Pre. Py. 3 and 4.
b, Compounding of prescriptions, making of solutions, emulsions, powders, pills; reading and compounding prescriptions. Must be taken same term as course 5.
Remington's Practice of Pharmacy.
Ruddiman's Incompatibilities in Prescriptions.

7 F.—Materia Medica, a 5, 9:30-10:30.
a, Medicinal properties, doses and poisonous effects of the various medicines, together with the antidotes which the pharmacist may be required to administer in an emergency will receive full and careful treatment.

8 W.—Materia Medica, a 5, 8:30-9:30.
Pre. 7.
a, Continuation of course 7.
Wilcox and White.

9 S.—Materia Medica, a 5, 9:30-10:30.
Pre 8.
a, Continuation of courses 7 and 8.
Wilcox and White.

10 S.—Drug Assaying, b 5, 3:15-5:15.
Pre. 3 and 4.
b, The drug assaying consists mainly in acquiring knowledge and practice in the preparation of official tests and volumetric solutions and the quantitative determination of the alkaloids found in some of the crude drugs. A short course in urine analysis is given in connection with drug assaying.
Pharmacopœia.
Lyon's Pharmaceutical Assaying.
Schimp's Volumetric Analysis.

DEPARTMENT OF COMMERCIAL SCIENCE.
(Cl.)

PROFESSOR CROSIER; MR. NELSON.

The Commercial department occupies commodious quarters on the second floor of the central building. Its rooms are exceptionally well suited to the work of the department and are supplied with tables, typewriters, offices for carrying on business transactions, such as banking, mercantile and post-office work. There are two distinct courses of study offered in this department, each extending over a period of one year; the amanuensis or shorthand course, and the business or commercial course. When the student has satisfactorily completed either course he will be given a certificate of graduation. The applicant for graduation in the amanuensis course must attain a shorthand speed, from general matter, of one hundred words per minute and transcribe the same on a machine at the rate of thirty-five words per minute. He must also show a thorough proficiency in his spelling, use of punctuation marks and other rules of composition and rhetoric. Neatness, thoroughness and speed are required of all. Penmanship and business letter writing, while not scheduled as a part of the regular course, are given particular emphasis throughout the year

The admission requirements to the work of this department are the same as those of the Freshman class, except that Horticulture is not required.. It is both a waste of time and money to study shorthand and business branches before having formed the habit of correct spelling and neatness in written exercises.

The expenses are the same as for any other work in the institution and far below what is usually charged for such instruction. College charges per term of twelve weeks are FIVE DOLLARS, which includes the use of a typewriter.

The work is as follows:

AMANUENSIS COURSE.

FALL TERM.

1 Shorthand, b 5, 1:15-3:15. Professor Crosier.
b, Consonant stems, vowels, diphthongs, initials and final hooks and circles, word signs, etc., in logical order. Elimination of vocalization through position; the habit of co-ordination emphasized from the beginning.
Graham's Hand Book to page 261.

Ln. 13. French, a 5, 9:30-10:30. Professor Wheeler.
For description of course see department of Modern Languages.

2 Typewriting, 5. Mr. Nelson.
b, Graded exercises on machine to learn key board, care of machine; business letters, law forms, manifolding, and mimeographing; department correspondence, speed practice, binding, folding and filing of all kinds of typewritten matter. One hour each day during school hours.

3 Commercial Law, a 5, 10:30-11:30. Professor Crosier.
a, Law in general, contracts, principal and agent, partnership, corporations, sales of personal and real property, bailments and common carriers, negotiable paper, deeds, mortgages and leases, collection laws, legal rates of interest, insurance, patent rights, trade marks and copyrights. This work is conducted by the outline method and at the end of each week an original essay of not less than five hundred words is required of each member of the class on the work covered during that period. At the close of the term an original disquisition of not less than five thousand words touching upon all the work is required. This must be typewritten, bound and in presentable shape to file for future reference.
Spencer's Commercial Law.

WINTER TERM.

4 Shorthand, b 5, 1:15-3:15. Professor Crosier.
b, Completion of hand book, observing particularly reporting words, signs and contractions, word phrasing etc., easy business letters and completion of I. C. R.
Graham's Hand Book. Graham's I. C. R.

Ln. 14. French, a 5, 9:30-10:30. Professor Wheeler.
For description of course see department of Modern Languages.

5 F. or W.—Bookkeeping, a 5, 8:30-9:30. Professor Crosier.

a, In all its elementary phases, as journalizing, posting taking trial balances, closing ledger, changing from single to double entry, etc., paying special attention to penmanship, neatness and accuracy.
Benton's High School Edition, completed.

6 Typewriting, 5, Mr. Nelson.
b, Continuation of work of Fall term. One hour each day during school hours. Students are required to transcribe all work taken in shorthand.
Military or physical culture, 3:15-4:15.

SPRING TERM.

7 Shorthand, b 5, 10:30-11:30. Professor Crosier.
b, General dictation from Brown's Business correspondence. Humphrey's Typewriting Manual and Universal Dictation Book, devoting considerable time to law forms.
The aim of this term is to familiarize the individual with letters pertaining to all branches of commerce and social life.
Musick's Universal Dictation Book.

Ln. 15. French a 5, 9:30-10:30. Professor Wheeler.
For description of course see department of Modern Languages.

2 Typewriting, b 5. Mr. Nelson.
b, One hour each day during school hours. All work of this term to be from shorthand notes. The purpose of this to give the student the power to read notes readily and transcribe the same rapidly. A speed of thirty-five words per minute from shorthand notes is required for graduation.

8 Commerce, a 4, 8:30-9:30. Professor Crosier.
a, This course is intended to give the student a practical knowledge of commercial conditions and methods and thus enable him the better to apprehend business.
Clow's Introduction to Commerce.

9 Parliamentary Law, a 1, 8:30-9:30. Professor Crosier.
a, A short concise course pertaining to the rules and regulations of parliamentary practice.
Military or Physical Culture, 3:15-4:15.

BUSINESS COURSE.

FALL TERM.

5 Bookkeeping, a 5, 8:30-9:30. Professor Crosier.
Pre. Pr. 4.

a, For description of work see Amanuensis course.
Completion of Benton's High School Edition.
Ln. 13. French a 5, 9:30-10:30. Professor Wheeler.
For description of course see Modern Languages.
10 Commercial Arithmetic, a 3, 1:15-2:15. Mr. Nelson.
a, To qualify the student to make rapid mental calculations.
Multiplication table required up to twenty-five inclusive.
3 Commercial Law, a 5, 10:30-11:30. Professor Crosier.
a, For description of work see Amanuensis course.
Military or Physical Culture, 3:15-4:15.

WINTER TERM.

11 Bookkeeping, a 5, 10:30-11:30. Professor Crosier.
b, Each student carries on regular retail business, through six offices, with the student body. While all transactions are of the same general nature the results are different, thus creating in the individual student a habit of self reliance. All work must be of a certain degree of excellency before the next step can be taken. This term's work comprises four hundred different transactions, together with the necessary letters, checks, drafts, notes, etc., that would naturally attend the same in actual business.
Ln. 14. French a 5, 9:30-10:30. Professor Wheeler.
See department of Modern Languages.
12 Commercial Arithmetic, a 5, 8:30-9:30. Mr. Nelson.
a, Short methods in addition, substraction, multiplication, and division, rapid calculation in percentage, interest, discount and ordinary arithmetical processes.
2 Typewriting, b 5. Mr. Nelson.
b, One hour each day during school hours. For description see Amanuensis course.
Military or Physical Culture. 3:15-4:15.

SPRING TERM.

13 Business Practice, b 5, 1:15-3:15. Professor Crosier.
b, Business practice, changing work of previous term into wholesale and commission business. All transactions are carried out by students with outside colleges, thereby approaching, as nearly as possible, actual business.
Goodyear's System of Business.
Ln. 15. French a 5, 9:30-10:30. Professor Wheeler.
See department of Modern Languages.
8 Commerce, a 4, 8:30-9:30. Professor Crosier.

a, This course is intended to give the student a practical knowledge of commercial conditions and methods and thus enable him the better to apprehend business.
Clow's Introduction to Commerce.

9 Parliamentary Law, a 1, 8:30-9:30. Professor Crosier.
a, A short, concise, course pertaining to the rules and regulations of parliamentary practice.
Lyon's Manual of Parliamentary Law.
Military or Physical Culture, 3:15-4:15.

SUB-FRESHMAN YEAR.

The work of this year is required for admission to the Pharmacy department and to the regular College courses. It includes subjects which no student can well omit, however technical a training is desired. These courses serve as a foundation upon which the higher work is based, and so taught as to stimulate the desire of the student towards this broader education. At the same time, the work is thoroughly practical to every walk of life.

FALL TERM.

El. Physics (Ph. 1, a 3 b 2.) 8:00- 9:30
Rhetoric, (Eh. 1, a 5.) 9:30-10:30
Algebra, (Ms. 3, a 5.) 10:30-11.30
El. Horticulture, (Ho. 1, a 2, b 1.) 1:15- 3:15
*Dairying, (Ag. b 3.) 2:15- 4:15
Military or Physical Culture, 2..... 3:15- 4:15

WINTER TERM.

El. Physics (Ph. 2, a 3 b 2.) 8:00- 9:30
Geometry (Ms. 4, a 5.) 9:30-10:30
Rhetoric, (Eh. 2,a 5.) 10:30-11:30
§Carpentry, (Me. b 3.) 1:15- 3:15
*Dairying, b 2 1:15- 3:15
Military of Physical Culture, 2 3:15- 4:15

SPRING TERM.

American Literature (Eh. 3, a 5.)..... 8:30- 9:30
Geometry, (Ms. 5, a 5.) 9:30-10:30
El. Physics (Ph. 3, a 4, b 1.)..... 10:30-11:30
§Cheese- making, b 3. 1:15-3:15
Military or Physical Culture, 2 3:15-4:15

*Not required of those who do not intend to follow the scheme in Agricultural Studies.

§Students not expecting to follow the scheme in Agriculture may choose Free Hand Drawing instead of Cheese-making. In the Winter term the girls are required to take Cooking instead of Carpentry.

PREPARATORY DEPARTMENT.

(Pr.)

MR. FORSEE.

The work in this department is prerequisite to all the other courses offered. Standings from the public schools in the state, at the discretion of the principal of the department, may be accepted, and due credit given for the same grade of work completed therein. The students of this department are under the immediate charge of an experienced member of the faculty, who superintends the methods of work, and strives to secure the forming of correct habits of work and life on the part of all. Students will not be admitted to this department unless they show sufficient development and training to carry the work offered.

A class in Elementary Algebra, reciting three times a week, will be formed at the beginning of the Fall term and continue their work throughout the year providing a sufficient number who have completed Arithmetic desire to take up this work.

The Franklin Literary Society is made up entirely of first and second year preparatory and short-course students.

The following courses are offered:

FALL TERM.

1 Arithmetic, a 5, 9:30-10:30.
Pre. Arithmetic to Percentage.
a, All the applications of percentage, analysis, rates and proportion, involution and evolution, mensuration, general review.
White's Complete Arithmetic.

2 English, a 5, 10:30-11:30.
Pre. A fair knowledge of Elementary Grammar.

a, Technical Grammar.
General review of Etymology, including analysis, parsing and construction of sentences. Syntax.
Maxwell's Advanced Lessons.

3 History, U. S., a 5, 1:15-2:15.
Pre. A general knowledge of the early history of the U. S., the Revolutionary war and the war of 1812.
a, The industrial development of our country (p. 241), the long struggle with slavery, the indestructibility of the Union, the economic struggle, the growth of the northwest.
McMaster's School History.

4 Bookkeeping, a 3, 8:30-9:30.
a, Single and double entry sets in actual business.
Benton's High School Edition.
Military, 5, or Physical Culture, 2.

11 Spelling, a 2.

WINTER TERM.

Ms 1. Algebra, a 5, 8:30-9:30.
For description of work see Ms. 1, Department of Mathematics.

5 English, a 5, 9:30-10:30.
a, Practical applications of Course 2 from Fall Term's work, such a choice of words, meaning of words, preferred usuages of words, according to best authorities.
Buehler's Practical Exercises.

6 Civics, a 5, 10:30-11:30.
a, General principles of government, state government, branches of government, the national government, principles of law, municipal law, international law, completion of Young's Civics.
Young's Government Class Book.

7 English History, a 5, 1:15-2:15.
a, Brief study of some elementary text.
Text to be announced.
Bookkeeping, a 3, 2:15-3:15.
a, Repetition of Course 4. May be taken by those who did not take the work during the Fall Term.
Benton's High School.
Military.

12 Spelling, a 2.

SPRING TERM.

8 Elementary Physiology, a 5, 1:15-2:15.

a, The anatomy of the chief structures of the human body and their physiology.
Text to be announced.

9 English, a 5, 9:30-10:30.
Pre. 2 and 5.
a, Continuation of Course 5. The class will take up higher work in preparation for Eh. 1. Exercises will consist of such work in construction and composition as may be required by the instructor in charge.
Butler's School English.

Ms. 2. Algebra, a 5, 8:30-9:30.
For description of work see Ms. 1, Department of Mathematics.

10 Physical Geography, a 5, 10:30-11:30.
a, Physiography of United States, introduction to Gl. 1.
Dryer's Physical Geography.

13 Spelling, a 2.
Military 5, or Physical Culture 2.

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